Confidential Draft Submitted on March 26, 2019
As Filed with the
Securities and Exchange Commission on , 2019.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

STOKE THERAPEUTICS, INC.
(Exact name of registrant as specified in its charter)

Delaware	2834	47-1144582
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

45 Wiggins Avenue
Bedford, MA 01730
(781)-430-8200
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Edward M. Kaye, M.D.
Chief Executive Officer
Stoke Therapeutics, Inc.
45 Wiggins Avenue
Bedford, MA 01730
(781)-430-8200
(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box. ☐

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or and "emerging growth company". See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☐	Smaller reporting company ☒
	Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided to Section 7(a)(2)(B) of the Securities Act. ☐

Calculation of registration fee

Title of each class of securities to be registered	Proposed maximum aggregate offering price(1)(2)	Amount of registration fee
Common Stock, par value $0.0001 per share	$	$

(1) The proposed maximum aggregate offering price includes the offering price of additional shares that the underwriters have the option to purchase.

(2) Estimated solely for purposes of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities, and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated March 26, 2019

Prospectus

shares

STOKE THERAPEUTICS

Common stock

This is the initial public offering of shares of our common stock. We are offering shares of our common stock. The initial public offering price is expected to be between $ and $ per share.

Prior to this offering, there has been no market for our common stock. We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "STOK."

We are an "emerging growth company" and a "smaller reporting company" as defined under the federal securities laws and, as such, may elect to comply with certain reduced public company reporting requirements for future filings. Investing in our common stock involves a high degree of risk. Please see the section entitled "Risk Factors" starting on page 11 to read about risks you should consider carefully before buying shares of our common stock.

	Per share	Total
Initial public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds to Stoke Therapeutics, Inc., before expenses	$	$

(1) We have agreed to reimburse the underwriters for certain FINRA-related expenses. See "Underwriting" for additional information regarding the compensation payable to the underwriters.

We have granted the underwriters an option for a period of 30 days to purchase up to additional shares of common stock from us at the public offering price, less underwriting discounts and commissions.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed on the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of common stock to purchasers on , 2019.

J.P. Morgan **Cowen** **Credit Suisse**

Canaccord Genuity

Prospectus dated , 2019

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Through and including , 2019 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This delivery is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

Neither we nor the underwriters have authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the shares offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of the common stock.

Persons who come into possession of this prospectus and any applicable free writing prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this

offering and the distribution of this prospectus and any such free writing prospectus applicable to that jurisdiction.

Trademarks and tradenames

The mark “Stoke Therapeutics” is our registered trademark. The Stoke logo and all product names are our common law trademarks. All other service marks, trademarks and tradenames appearing in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights, or the right of the applicable licensor to these trademarks and tradenames.

Market and industry data

This prospectus contains estimates and other statistical data made by independent parties, as well as by Health Advances LLC in a report that we commissioned, and by us relating to our industry and the markets in which we operate, including our general expectations and market position, market opportunity, the incidence of certain medical conditions and other industry data. These data, to the extent they contain estimates or projections, involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates or projections. Although we have not independently verified the accuracy or completeness of the data contained in these industry publications and reports, based on our industry experience we believe that the publications are reliable, the conclusions contained in the publications and reports are reasonable and the third-party information included in this prospectus and in our estimates is accurate and complete. While we are not aware of any misstatements regarding the industry, survey or research data provided herein, our estimates involve risks and uncertainties and are subject to change based upon various factors, including those discussed under the sections titled “Risk factors” and “Special note regarding forward-looking statements.” These and other factors could cause results to differ materially from those expressed in these publications and reports.

Prospectus summary

This summary highlights selected information contained elsewhere in this prospectus and does not contain all of the information that you should consider in making your investment decision. Before investing in our common stock, you should carefully read this entire prospectus, including our consolidated financial statements and the related notes thereto and the information set forth under the sections entitled "Risk factors," "Selected consolidated financial data" and "Management's discussion and analysis of financial condition and results of operations," in each case included in this prospectus. Some of the statements in this prospectus constitute forward-looking statements that involve risks and uncertainties. See the section entitled "Special note regarding forward-looking statements." Unless the context otherwise requires, we use the terms "Stoke," "company," "we," "us" and "our" in this prospectus to refer to Stoke Therapeutics, Inc.

Company overview

We are pioneering a new way to treat the underlying causes of severe genetic diseases by precisely upregulating protein expression. We are developing novel antisense oligonucleotide, or ASO, medicines that target ribonucleic acid, or RNA, and modulate precursor-messenger RNA, or pre-mRNA, splicing to upregulate protein expression where needed and with appropriate specificity to near normal levels. We utilize our proprietary technology platform, Targeted Augmentation of Nuclear Gene Output, or TANGO, to design ASOs to upregulate the expression of protein by individual genes in a patient. Our approach is designed to allow us to deliver in a highly precise, durable and controlled manner disease-modifying therapies to a broad range of relevant tissues, including the central nervous system, or CNS, eye, kidney and liver. We designed our lead product candidate, STK-001, to treat Dravet syndrome, a severe and progressive genetic epilepsy. With a well-defined patient population based on routine genetic testing and learnings from recently approved drugs for the treatment of Dravet syndrome to inform the clinical and regulatory pathways for STK-001, we anticipate an efficient clinical program for STK-001. We plan to submit an investigational new drug application, or IND, for STK-001 by early 2020 and expect to initiate a Phase 1/2 clinical trial in the first half of 2020. We intend to nominate a second candidate to treat an additional genetic disease for preclinical development by the first half of 2020.

We are developing TANGO as potentially the first precision medicine platform for treating a category of severe genetic diseases known as autosomal dominant haploinsufficiencies, or diseases in which only one copy, or allele, of the gene needs to be mutated for the disease or trait to develop, and in which that mutated allele generates a protein that is severely deficient in amount or activity, resulting in approximately 50% of normal protein expression in the patient. Our novel ASOs are designed to address this protein deficiency by precisely upregulating target protein expression and have the potential to provide disease-modifying therapies to treat many diseases beyond the reach of current approaches. Within haploinsufficiencies, we are initially prioritizing the development of ASOs for the treatment of genetic epilepsies, and specifically Dravet syndrome. Current treatments for Dravet syndrome only address the occurrence of seizures, and do so very poorly, with more than 90% of Dravet syndrome patients suffering from inadequate seizure control with existing antiepileptic regimens. We believe we have the first genetic medicine designed to target the underlying cause of Dravet syndrome with the potential to significantly reduce the occurrence of seizures, and also potentially address, for the first time, the severe intellectual and developmental disabilities of the disease.

Today, multiple therapeutic modalities, including gene therapy, gene editing, modified mRNA, protein-based drugs, small molecules and oligonucleotides are approved or are being developed to address all types of monogenic diseases. However, most of these therapeutic approaches are focused on autosomal recessive or autosomal dominant gain-of-function diseases, and existing precision medicine platforms have fundamental

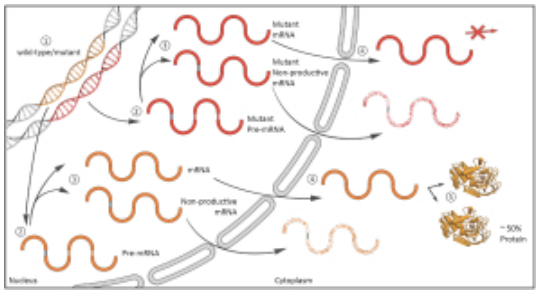
limitations that make them poorly suited to address haploinsufficiencies. Numerous technical challenges preclude effective application of these modalities, including the inability to control level and tissue distribution of target protein expression, potential irreversible on- and off-target effects, target gene size limitations and incompatibility with diseases caused by many mutations. As a result, there is a need for novel therapeutics that can restore protein expression and address the underlying genetic causes of haploinsufficiencies.

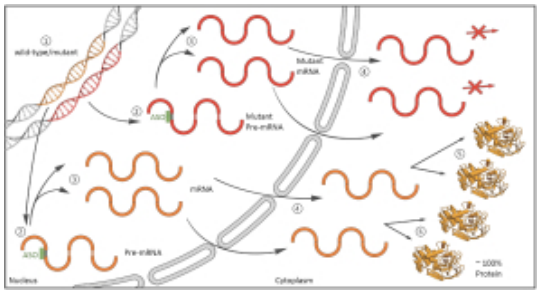
Our precision medicine platform

Treatment of autosomal dominant haploinsufficiency diseases with TANGO

TANGO exploits unique, patented mechanisms for antisense-mediated modulation of splicing to prevent the synthesis of naturally occurring non-productive messenger RNA, or mRNA, and to increase the synthesis of productive mRNA to increase production of functional protein. TANGO is designed to address multiple forms of non-productive splicing events and operates in a mutation-independent manner, thereby potentially providing a single-drug approach for diseases that are caused by many loss-of-function mutations in a single gene. We have assembled a proprietary database of non-productive events in the human transcriptome and have identified approximately 2,900 monogenic, or single gene, diseases which we believe are amenable to TANGO. We have an intellectual property estate that includes multi-national allowed and pending claims for the TANGO mechanisms, as well as multi-national pending claims relating to compositions of matter of oligonucleotides designed to target specific TANGO elements in genes for more than 140 genetic diseases that we believe are amenable to upregulation of target protein expression using TANGO.

The figures below illustrate the TANGO mechanism for increasing protein synthesis in a prospective patient with a haploinsufficiency. To date, we have demonstrated this TANGO mechanism in preclinical models of haploinsufficiency. The left panel illustrates the prospective patient with a haploinsufficiency possessing one wild-type allele and one mutant allele. The mutant allele is translated into non-functional protein and results in approximately 50% of normal protein expression. In the right panel, treatment with our ASO would prevent the synthesis of naturally occurring non-productive mRNA and would increase the synthesis of productive mRNA, thereby restoring the target protein to near normal levels. Our preclinical studies show that any increase in mutant mRNA would have no effect on the net protein level.





Advantages of TANGO

We believe TANGO may have several key advantages over existing and emerging therapeutic modalities, including:

- *Ability to address the underlying genetic cause of the disease.* We utilize TANGO to design ASOs to precisely upregulate protein expression, thereby addressing the underlying cause of the disease rather than the symptoms of the disease.

- *Applicability is mutation-independent.* Our ASOs upregulate expression of the wild-type allele, meaning the TANGO mechanism does not rely on targeting a specific mutation.
- *Utility across small and large gene targets encoding intracellular and extracellular proteins.* Our ASOs upregulate protein expression regardless of gene size and are not constrained to smaller gene targets.
- *No observed unwanted off-target effects.* TANGO-mediated upregulation of protein expression only occurs where the gene is being naturally transcribed, limiting the likelihood of expression in non-native tissues.
- *Ability to control dose level and duration.* Our ASOs provide the ability for dose titration, thereby allowing for dose-dependent and reversible control of level and duration of protein expression. The ability to titrate dosage provides us with flexibility to address a variety of tissue types, and potentially enables us to deliver the right dose, at the right location, for each indication.
- *Utility across a wide array of diseases and tissue types.* We believe that ASO delivery to the CNS, eye, kidney and liver is well-established, providing us the potential to address a broad range of genetic diseases. Additionally, ASO delivery to the CNS is particularly well-precedented, with one FDA-approved ASO (SPINRAZA) and several others in clinical development.
- *Fixed dose, rather than weight-based dosing*. For CNS and eye targets, the dose of our ASOs should not require adjustment between patients to be effective. We believe that a fixed dose across all ages in these targets will lessen reimbursement hurdles associated with a weight-adjusted dose pricing model.
- *Favorable dosing regimen.* We believe our ASOs may require as few as two to three administrations per year for the CNS or the eye and will generally involve relatively low doses, which would translate to simplified use, an improved safety profile from reduced systemic exposure and lower cost of goods.
- *Simple and scalable manufacturing*. Our novel ASOs are synthesized by highly scalable, solid-phase chemical synthesis and we leverage a well-established contract manufacturing base. We believe the manufacturing requirements for our ASOs are much simpler, more scalable and more cost-effective than gene therapy and gene editing.

Our programs

Dravet syndrome—STK-001

Our most advanced program is a potentially disease-modifying treatment for Dravet syndrome, a severe and progressive genetic epilepsy. We have generated preclinical data demonstrating proof-of-mechanism for STK-001 and intend to submit an IND by early 2020. We are leveraging similar ASO chemistry as the approved drug, SPINRAZA, which minimizes potential safety and biodistribution risks in the CNS. We plan to apply for Orphan Drug Designation from the FDA in the first half of 2019, expect to initiate a Phase 1/2 clinical trial in children and adolescents with Dravet syndrome in the first half of 2020 and anticipate clinical data, including preliminary efficacy data, in 2021. If we see evidence of efficacy following clinical data, then we would plan to meet with regulatory authorities to discuss expedited regulatory pathways, such as Fast Track Designation and Breakthrough Therapy Designation.

Additional product opportunities

We intend to nominate a second genetic disease preclinical candidate by the first half of 2020. We are also advancing several other early programs focused on multiple targets, including haploinsufficiency diseases of the CNS, eye, kidney and liver, given the potential of our ASOs to target cells in these organs, and will seek to

further establish a pipeline of product candidates in the future. Additional non-epilepsy indications for which our technology may be applicable include autosomal dominant optic atrophy and autosomal dominant polycystic kidney disease.

Our strategy

We are using our proprietary TANGO technology platform to create ASOs for the treatment of severe genetic diseases. The critical components of our strategy include:

- Rapidly advance our lead program, STK-001, to clinical proof-of-concept, approval and commercialization.
- Prioritize genetic epilepsies for near-term development efforts.
- Expand our pipeline into other disease areas to fully exploit the potential of our proprietary platform.
- Maintain broad commercial rights to our product candidates.
- Continue to strengthen and expand our intellectual property portfolio.

Our team

Our executive management team has extensive collective expertise in human genetics and modulation of RNA processes using ASOs, as well as a track record of success in rare disease drug development. Our Chief Executive Officer, Edward M. Kaye, M.D., our Chief Operating Officer and Chief Business Officer, Huw M. Nash, Ph.D., and our Chief Medical Officer, Barry S. Ticho, M.D., Ph.D., FACC, bring extensive biotechnology and pharmaceutical industry experience to our team. In addition, our co-founders, Adrian R. Krainer, Ph.D. (who serves on our board of directors) and Isabel Aznarez, Ph.D. (who serves as our Vice President of Biology), offer extensive academic and research experience, including Professor Krainer’s experience which led to the invention and development of SPINRAZA. Finally, our scientific and clinical advisory boards are comprised of leading experts in the fields of human genetics, pre-mRNA splicing and ASOs, and neurodevelopmental and neurodegenerative diseases.

Our funding

As of December 31, 2018, we have raised over $130 million in funding from two financing rounds, including investments from Apple Tree Partners, RTW Investments, RA Capital Management, Cormorant Asset Management, Perceptive Advisors and funds managed by Janus Henderson Investors, Redmile Group, Sphera Funds Management and Alexandria Venture Investments.

Risks affecting us

Our business is subject to a number of risks and uncertainties, including those highlighted in the section entitled “Risk factors” immediately following this prospectus summary. These risks include, among others, the following:

- We are early in our development efforts. If we are unable to develop, obtain regulatory approval for and commercialize STK-001 and our future product candidates, or if we experience significant delays in doing so, our business will be materially harmed.
- We have not tested any of our product candidates in clinical trials. Success in early preclinical studies or clinical trials may not be indicative of results obtained in later preclinical studies and clinical trials.

- Even if we complete the necessary preclinical studies and clinical trials, we cannot predict when, or if, we will obtain regulatory approval to commercialize a product candidate and the approval may be for a narrower indication than we seek.
- Certain of the diseases we seek to treat have low prevalence, and it may be difficult to identify patients with these diseases, which may lead to delays in enrollment for our trials or slower commercial revenue growth if STK-001 or our future product candidates are approved.
- We may not be successful in our efforts to use TANGO to expand our pipeline of product candidates and develop marketable products.
- Any product candidate for which we obtain marketing approval will be subject to extensive post-marketing regulatory requirements and could be subject to post-marketing restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our product candidates, when and if any of them are approved.
- Our success depends in part on our ability to obtain, maintain and protect our intellectual property. It is difficult and costly to protect our proprietary rights and technology, and we may not be able to ensure their protection.
- We depend on intellectual property licensed from third parties, and disputes regarding or termination of these licenses could result in loss of significant rights, which would harm our business.
- We have a limited operating history, a history of operating losses and may never achieve or sustain profitability.
- Even if we complete this offering, we will need substantial additional funds to advance development of STK-001 and our future product candidates, and failure to obtain timely funding may force us to delay, limit or terminate our product development programs, commercialization efforts or other operations.

Corporate information

We were incorporated under the laws of the State of Delaware in June 2014 under the name ASOthera Pharmaceuticals, Inc. We subsequently changed our name to Stoke Therapeutics, Inc. on May 18, 2016. Our principal executive office is located at 45 Wiggins Avenue, Bedford, Massachusetts, 01730, and our telephone number is (781) 430-8200. Our website address is www.stoketherapeutics.com. The information contained on, or that can be accessed through, our website is not part of, and is not incorporated by reference into, this prospectus. Investors should not rely on any such information in deciding whether to purchase our common stock.

Implications of being an emerging growth company and smaller reporting company

As a company with less than $1.07 billion in revenue during our last fiscal year, we qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, or JOBS Act. An emerging growth company may take advantage of reduced reporting requirements that are otherwise applicable to public companies. These provisions include, but are not limited to:

- being permitted to present only two years of audited financial statements and only two years of related Management’s discussion and analysis of financial condition and results of operations in this prospectus;
- not being required to comply with the auditor attestation requirements on the effectiveness of our internal controls over financial reporting;

- not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation arrangements; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We may use these provisions until the last day of our fiscal year following the fifth anniversary of the completion of this offering. However, if certain events occur prior to the end of such five-year period, including if we become a "large accelerated filer," our annual gross revenues exceed $1.07 billion or we issue more than $1.0 billion of non-convertible debt in the prior three-year period, we will cease to be an emerging growth company prior to the end of such five-year period.

We have elected to take advantage of certain of the reduced disclosure obligations in the registration statement of which this prospectus is a part and may elect to take advantage of other reduced reporting requirements in future filings. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards, until those standards apply to private companies. We have elected to take advantage of the benefits of this extended transition period and, therefore, we will not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. Our consolidated financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an emerging growth company or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act of 1933, as amended, upon issuance of a new or revised accounting standard that applies to our consolidated financial statements and that has a different effective date for public and private companies, we will disclose the date on which adoption is required for non-emerging growth companies and the date on which we will adopt the recently issued accounting standard.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700 million and our annual revenue is less than $100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than $250 million or (ii) our annual revenue is less than $100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

The offering

Common stock offered by us	shares
Common stock to be outstanding immediately after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full).
Option to purchase additional shares	We have granted the underwriters an option, exercisable for 30 days after the date of this prospectus, to purchase up to an additional shares from us.
Use of proceeds	We estimate that the net proceeds from this offering will be approximately $ million (or approximately $ million if the underwriters exercise their option to purchase additional shares in full), based upon the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses. We intend to use the net proceeds that we receive in this offering to advance our lead product candidate, STK-001, through initiation of a Phase 3 clinical trial, to nominate and demonstrate clinical proof of concept for additional product candidates and for general corporate purposes. See the section entitled “Use of proceeds.”
Risk factors	You should read the section entitled “Risk factors” in this prospectus for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
Proposed Nasdaq Global Market symbol	“STOK”

The number of shares of our common stock to be outstanding after this offering is based on (i) 7,236,019 shares of our common stock outstanding as of December 31, 2018 and (ii) the automatic conversion of all outstanding shares of our convertible preferred stock as of December 31, 2018 into an aggregate of shares of common stock immediately prior to the completion of this offering and excludes:

- 34,663,530 shares of common stock issuable upon the exercise of options outstanding as of December 31, 2018 under our 2014 Equity Incentive Plan, or the 2014 Plan, with a weighted-average exercise price of $0.12 per share;
- 7,110,806 shares of common stock issuable upon the exercise of options granted after December 31, 2018 under the 2014 Plan, with a weighted-average exercise price of $0.35 per share; and
- shares of common stock reserved for future issuance under our stock-based compensation plans, consisting of (i) 11,042,826 shares of common stock reserved for future issuance under our 2014 Plan as of

December 31, 2018 and (ii) shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan, which will become effective on the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part. Upon completion of this offering, any remaining shares available for issuance under our 2014 Plan will be added to the shares reserved under our 2019 Equity Incentive Plan and we will cease granting awards under our 2014 Plan. Our 2019 Equity Incentive Plan also provides for automatic annual increases in the number of shares reserved under the plans each year, as more fully described in "Executive compensation—Equity compensation plans and other benefit plans."

Except as otherwise indicated, all information in this prospectus assumes or gives effect to:

- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 225,584,874 shares of common stock immediately prior to the completion of this offering;
- a -for- reverse stock split to be effected on , 2019;
- the effectiveness of our restated certificate of incorporation and restated bylaws in connection with the completion of this offering;
- no exercise of outstanding options after December 31, 2018; and
- no exercise of the underwriters' option to purchase additional shares of our common stock.

Summary consolidated financial data

The following tables set forth our summary consolidated statements of operations and consolidated balance sheet data. The summary consolidated statements of operations data presented below for the years ended December 31, 2018 and 2017 are derived from our audited consolidated financial statements included elsewhere in this prospectus. The following summary consolidated financial data should be read in conjunction with "Selected consolidated financial data," "Management's discussion and analysis of financial condition and results of operations" and our consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period. The summary consolidated financial data in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and related notes included elsewhere in this prospectus.

	Year ended December 31,	
	2018	2017
	(In thousands, except share and per share amounts)	
Consolidated statements of operations data:		
Revenue	$ —	$ —
Operating expenses:		
Research and development	8,371	3,598
General and administrative	4,410	1,956
Total operating expenses	12,781	5,554
Loss from operations	(12,781)	(5,554)
Other income (expense):		
Interest income	270	—
Other expense, net	(10)	(4)
Total other income (expense)	260	(4)
Net loss	$ (12,521)	$ (5,558)
Net loss per share attributable to common stockholders, basic and diluted[1]	$ (1.77)	$ (0.83)
Weighted-average common shares outstanding, basic and diluted[1]	7,056,159	6,665,733
Pro forma net loss per share, basic and diluted[1]	$ (0.10)	
Weighted-average shares used in computing pro forma net loss per share, basic and diluted[1]	127,659,034	

(1) See Notes 2 and 11 to our consolidated financial statements included elsewhere in this prospectus for a description of how we compute basic and diluted net loss per share and basic and diluted pro forma net loss per share, and the weighted-average number of shares used in the computation of these per share amounts.

	As of December 31, 2018	
	Actual	Pro forma[1][2]
		(unaudited)
		(in thousands)
Consolidated balance sheet data:		
Cash, cash equivalents and restricted cash	$ 105,603	$
Total assets	107,539	
Working capital[3]	103,676	
Total liabilities	2,471	
Accumulated deficit	(25,710)	
Total stockholders' equity	105,068	

(1) The pro forma balance sheet data gives effect to (i) the automatic conversion of all outstanding shares of our convertible preferred stock as of December 31, 2018 into an aggregate of 225,584,874 shares of common stock immediately prior to the completion of this offering and (ii) the receipt of $ million in net proceeds from the sale of shares of common stock in this offering, based upon an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses.

(2) Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) each of our pro forma cash, cash equivalents and restricted cash, working capital, total assets and total stockholders' equity by approximately $ million, assuming that the number of shares offered, as set forth on the cover of this prospectus, remains the same and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered would increase (decrease) each of our pro forma cash, cash equivalents and restricted cash, working capital, total assets and total stockholders' equity by approximately $ million, assuming the assumed initial public offering price per share as set forth on the cover of this prospectus remains the same and after deducting the estimated underwriting discounts and commissions. The pro forma information is illustrative only, and we will adjust this information based on the actual initial public offering price and other terms of this offering determined at pricing.

(3) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

Risk factors

Investing in our common stock involves a high degree of risk. Before making your decision to invest in shares of our common stock, you should carefully consider the risks described below, together with the other information contained in this prospectus, including our consolidated financial statements and the related notes appearing at the end of this prospectus. We cannot assure you that any of the events discussed below will not occur. These events could have a material and adverse impact on our business, financial condition, results of operations and prospects. If that were to happen, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks related to product development and regulatory approval

We are early in our development efforts. If we are unable to develop, obtain regulatory approval for and commercialize STK-001 and our future product candidates, or if we experience significant delays in doing so, our business will be materially harmed.

We have invested substantially all of our efforts and financial resources in the development of TANGO and our current lead product candidate, STK-001 for the treatment of Dravet syndrome. We plan to submit an investigational new drug application, or IND, for STK-001 by early 2020. Our ability to generate product revenue, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of TANGO and our product candidates, which may never occur. We currently generate no revenue from sales of any product and we may never be able to develop or commercialize a marketable product.

Each of our programs and product candidates will require preclinical and clinical development, regulatory approval in multiple jurisdictions, obtaining preclinical, clinical and commercial manufacturing supply, capacity and expertise, building of a commercial organization, substantial investment and significant marketing efforts before we generate any revenue from product sales. STK-001 and our future product candidates must be authorized for marketing by the U.S. Food and Drug Administration, or the FDA, or certain other foreign regulatory agencies, such as the European Medicines Agency, or the EMA, before we may commercialize any of our product candidates.

The success of STK-001 and our future product candidates depends on multiple factors, including:

- effective INDs and Clinical Trial Authorizations, or CTAs, that allow commencement of our planned clinical trials or future clinical trials for our product candidates in relevant territories;
- successful completion of preclinical studies, including those compliant with Good Laboratory Practices, or GLP, or GLP toxicology studies, biodistribution studies and minimum effective dose studies in animals, and successful enrollment and completion of clinical trials compliant with current Good Clinical Practices, or GCPs;
- positive results from our clinical programs that are supportive of safety and efficacy and provide an acceptable risk-benefit profile for our product candidates in the intended patient populations;
- receipt of regulatory approvals from applicable regulatory authorities;
- establishment of arrangements with third-party contract manufacturing organizations, or CMOs, for key materials used in our manufacturing processes and to establish backup sources for clinical and large-scale commercial supply;
- establishment and maintenance of patent and trade secret protection and regulatory exclusivity for our product candidates;

- commercial launch of our product candidates, if and when approved, whether alone or in collaboration with others;
- acceptance of our product candidates, if and when approved, by patients, patient advocacy groups, third-party payors and the general medical community;
- our effective competition against other therapies available in the market;
- establishment and maintenance of adequate reimbursement from third-party payors for our product candidates;
- our ability to acquire or in-license additional product candidates;
- prosecution, maintenance, enforcement and defense of intellectual property rights and claims; and
- maintenance of a continued acceptable safety profile of our product candidates following approval.

If we do not succeed in one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize our product candidates, which would materially harm our business. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations.

We have not tested any of our product candidates in clinical trials. Success in early preclinical studies or clinical trials may not be indicative of results obtained in later preclinical studies and clinical trials.

Though ASOs have been evaluated by others in clinical trials, STK-001 has not been evaluated in human clinical trials, and we may experience unexpected or negative results in the future. We will be required to demonstrate through adequate and well-controlled clinical trials that our product candidates are safe and effective, with a favorable benefit-risk profile, for use in their target indications before we can seek regulatory approvals for their commercial sale. The positive results we have observed for our product candidates in preclinical animal models may not be predictive of our future clinical trials in humans, as mouse models carry inherent limitations relevant to all preclinical studies. In particular, the Dravet syndrome mouse model is more severe than the human disease and provides a shorter post-symptomatic observation period. Trial designs and results from early-phase trials are not necessarily predictive of future clinical trial designs or results, and initial positive results we may observe may not be confirmed in later-phase clinical trials. Our product candidates may also fail to show the desired safety and efficacy in later stages of clinical development even if they successfully advance through initial clinical trials. We may not be able to demonstrate a disease-modifying effect of STK-001 in our clinical trials in Dravet syndrome patients, even if we are able to demonstrate efficacy on seizure reduction. Even if our clinical trials demonstrate acceptable safety and efficacy of STK-001, the labeling we obtain through negotiations with the FDA or foreign regulatory authorities may not include data on secondary endpoints and may not provide us with a competitive advantage over other products approved for the same or similar indications.

Many companies in the biotechnology industry have suffered significant setbacks in late-stage clinical trials after achieving positive results in early-stage development and there is a high failure rate for product candidates proceeding through clinical trials. In addition, different methodologies, assumptions and applications we utilize to assess particular safety or efficacy parameters may yield different statistical results. Even if we believe the data collected from clinical trials of our product candidates are promising, these data may not be sufficient to support approval by the FDA or foreign regulatory authorities. Preclinical and clinical data can be interpreted in different ways. Accordingly, the FDA or foreign regulatory authorities could interpret these data in different ways from us or our partners, which could delay, limit or prevent regulatory approval. If our study data do not consistently or sufficiently demonstrate the safety or efficacy of any of our product

candidates, including STK-001, then the regulatory approvals for such product candidates could be significantly delayed as we work to meet approval requirements, or, if we are not able to meet these requirements, such approvals could be withheld or withdrawn. Regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development. We cannot be certain that we will not face similar setbacks.

Even if we complete the necessary preclinical studies and clinical trials, we cannot predict when, or if, we will obtain regulatory approval to commercialize a product candidate and the approval may be for a narrower indication than we seek.

Prior to commercialization, STK-001 and our future product candidates must be approved by the FDA pursuant to a new drug application, or NDA, in the United States and pursuant to similar marketing applications by the EMA and similar regulatory authorities outside the United States. The process of obtaining marketing approvals, both in the United States and abroad, is expensive and takes many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate. We have not received approval to market STK-001 or any of our future product candidates from regulatory authorities in any jurisdiction. We have no experience in submitting and supporting the applications necessary to gain marketing approvals, and, in the event regulatory authorities indicate that we may submit such applications, we may be unable to do so as quickly and efficiently as desired. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. Securing marketing approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the regulatory authorities. Our product candidates may not be effective, may be only moderately effective or may prove to have undesirable or unintended side effects, toxicities or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use. Regulatory authorities have substantial discretion in the approval process and may refuse to accept or file any application or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a product candidate.

Approval of STK-001 and our future product candidates may be delayed or refused for many reasons, including:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate, to the satisfaction of the FDA or comparable foreign regulatory authorities, that our product candidates are safe and effective for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that our product candidates' clinical and other benefits outweigh their safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical programs or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA or other comparable submission in foreign jurisdictions or to obtain regulatory approval in the United States or elsewhere;

- the facilities of third-party manufacturers with which we contract or procure certain service or raw materials, may not be adequate to support approval of our product candidates; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Even if our product candidates meet their safety and efficacy endpoints in clinical trials, the regulatory authorities may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval. Additional delays may result if an FDA Advisory Committee or other regulatory authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory authority policy during the period of product development, clinical trials and the review process.

Regulatory authorities also may approve a product candidate for more limited indications than requested or they may impose significant limitations in the form of narrow indications, warnings or Risk Evaluation and Mitigation Strategies. These regulatory authorities may require precautions or contra-indications with respect to conditions of use or they may grant approval subject to the performance of costly post-marketing clinical trials. In addition, regulatory authorities may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates and adversely affect our business, financial condition, results of operations and prospects.

Certain of the diseases we seek to treat have low prevalence, and it may be difficult to identify patients with these diseases, which may lead to delays in enrollment for our trials or slower commercial revenue growth if STK-001 or our future product candidates are approved.

Genetically defined diseases generally, and especially those for which our lead product candidate is targeted, have low incidence and prevalence. We estimate that the incidence of Dravet syndrome is approximately 1 in 15,625 births. This could pose obstacles to the timely recruitment and enrollment of a sufficient number of eligible patients into our trials, or limit a product candidate's commercial potential. Patient enrollment may be affected by other factors including:

- the ability to identify and enroll patients that meet study eligibility criteria in a timely manner for clinical trials;
- the severity of the disease under investigation;
- design of the study protocol;
- the perceived risks, benefits and convenience of administration of the product candidate being studied;
- the patient referral practices of providers; and
- the proximity and availability of clinical trial sites to prospective patients.

Our inability to enroll a sufficient number of patients with these diseases for our planned clinical trials would result in significant delays and could cause us to not initiate or abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidate, which would cause the value of our company to decline and limit our ability to obtain additional financing.

Additionally, our projections of both the number of people who have Dravet syndrome, as well as the people with this disease who have the potential to benefit from treatment with our product candidate, are based on estimates derived from a market research study that we commissioned, which may not accurately identify the

size of the market for our product candidates. The total addressable market opportunity for STK-001 and our future product candidates will ultimately depend upon, among other things, the final labeling for our product candidates, if our product candidates are approved for sale in our target indications, acceptance by the medical community and patient access, drug pricing and reimbursement. The number of patients globally may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our product candidates, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

Moreover, in light of the limited number of potential patients impacted by Dravet syndrome, our per-patient therapy pricing of STK-001, if approved, must be high in order to recover our development and manufacturing costs, fund additional research and achieve profitability. We may also need to fund patient support programs upon the marketing of a product candidate, which would negatively affect our product revenue. We may be unable to maintain or obtain sufficient therapy sales volumes at a price high enough to justify our development efforts and our sales, marketing and manufacturing expenses.

We may not be successful in our efforts to use TANGO to expand our pipeline of product candidates and develop marketable products.

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications. Our business depends on our successful development and commercialization of the limited number of internal product candidates we are researching or have in preclinical development. Even if we are successful in continuing to build our pipeline, development of the potential product candidates that we identify will require substantial investment in additional clinical development, management of clinical, preclinical and manufacturing activities, regulatory approval in multiple jurisdictions, obtaining manufacturing supply capability, building a commercial organization, and significant marketing efforts before we generate any revenue from product sales. Furthermore, such product candidates may not be suitable for clinical development, including as a result of their harmful side effects, limited efficacy or other characteristics that indicate that they are unlikely to be products that will receive marketing approval and achieve market acceptance. If we cannot validate TANGO by successfully developing and commercializing product candidates based upon our technological approach, we may not be able to obtain product revenue in future periods, which would adversely affect our business, prospects, financial condition and results of operations.

Although we intend to nominate a second genetic disease candidate for preclinical development in the first half of 2020, we are primarily focused on our lead product candidate, STK-001, and we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. Our understanding and evaluation of biological targets for the discovery and development of new product candidates may fail to identify challenges encountered in subsequent preclinical and clinical development. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights.

Any product candidate for which we obtain marketing approval will be subject to extensive post-marketing regulatory requirements and could be subject to post-marketing restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our product candidates, when and if any of them are approved.

Our product candidates and the activities associated with their development and potential commercialization, including their testing, manufacturing, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other U.S. and international regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, requirements relating to manufacturing, including current Good Manufacturing Practices, or cGMPs, quality control, quality assurance and corresponding maintenance of records and documents, including periodic inspections by the FDA and other regulatory authorities and requirements regarding the distribution of samples to providers and recordkeeping.

The FDA may also impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of any approved product. The FDA closely regulates the post-approval marketing and promotion of drugs and biologics to ensure drugs and biologics are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA imposes stringent restrictions on manufacturers' communications regarding use of their products. If we promote our product candidates in a manner inconsistent with FDA-approved labeling or otherwise not in compliance with FDA regulations, we may be subject to enforcement action. Violations of the Federal Food, Drug, and Cosmetic Act relating to the promotion of prescription drugs may lead to investigations alleging violations of federal and state healthcare fraud and abuse laws, as well as state consumer protection laws and similar laws in international jurisdictions.

In addition, later discovery of previously unknown adverse events or other problems with our product candidates, manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such product candidates, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on product distribution or use;
- requirements to conduct post-marketing studies or clinical trials;
- warning or untitled letters;
- withdrawal of any approved product from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of product candidates;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our product candidates;
- product seizure; or
- injunctions or the imposition of civil or criminal penalties.

Non-compliance with European requirements regarding safety monitoring or pharmacovigilance, and with requirements related to the development of products for the pediatric population, can also result in significant financial penalties. Similarly, failure to comply with Europe's requirements regarding the protection of personal information can also lead to significant penalties and sanctions.

Our failure to obtain regulatory approval in international jurisdictions would prevent us from marketing our product candidates outside the United States.

To market and sell STK-001 and our future product candidates in other jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, we must secure product reimbursement approvals before regulatory authorities will approve the product for sale in that country. Failure to obtain foreign regulatory approvals or non-compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our product candidates in certain countries. The United Kingdom's pending exit from the European Union, or the EU, which is referred to as "Brexit," continues to create political and economic uncertainty, particularly in the United Kingdom and the EU. Since a significant proportion of the regulatory framework in the United Kingdom is derived from EU directives and regulations, the withdrawal of the United Kingdom from the EU could materially impact the regulatory regime with respect to the approval of our product candidates in the United Kingdom or the EU.

If we fail to comply with the regulatory requirements in international markets and receive applicable marketing approvals, our target market will be reduced and our ability to realize the full market potential of our product candidates will be harmed and our business will be adversely affected. We may not obtain foreign regulatory approvals on a timely basis, if at all. Our failure to obtain approval of any of our product candidates by regulatory authorities in another country may significantly diminish the commercial prospects of that product candidate and our business prospects could decline.

STK-001 and our future product candidates may cause undesirable and unforeseen side effects or be perceived by the public as unsafe, which could delay or prevent their advancement into clinical trials or regulatory approval, limit the commercial potential or result in significant negative consequences.

Although other ASOs have received regulatory approval, our method of seeking to upregulate protein expression by targeting the underlying genetic causes of haploinsufficiencies presents a new approach to disease treatment, which means there is uncertainty associated with the safety profile of STK-001 and our future product candidates and drugs in the antisense oligonucleotide class.

In addition to side effects caused by our product candidates, the intrathecal administration process or related procedures also can cause adverse side effects. If any such adverse events occur, our clinical trials could be suspended or terminated. If we are unable to demonstrate that any adverse events were caused by the administration process or related procedures, the FDA, the European Commission, the EMA or other regulatory authorities could order us to cease further development of, or deny approval of, our product candidates for any or all targeted indications. Even if we can demonstrate that all future serious adverse events are not product-related, such occurrences could affect patient recruitment or the ability of enrolled patients to complete the trial. Moreover, if we elect, or are required, to not initiate, delay, suspend or terminate any future clinical trial of any of our product candidates, the commercial prospects of such product candidates may be harmed and our ability to generate product revenues from any of these product candidates may be delayed or eliminated. Any of these occurrences may harm our ability to develop other product candidates, and may adversely affect our

business, financial condition, results of operations and prospects significantly. Finally, SPINRAZA, which is produced by Biogen Inc., is an ASO therapy utilizing intrathecal delivery, and if SPINRAZA is found to cause undesirable side effects or to be unsafe due to a potential class effect, it may adversely affect demand for STK-001 and our other future product candidates. Other ASOs in clinical development utilizing intrathecal delivery could also generate data that could adversely affect the clinical, regulatory or commercial perception of STK-001 and our other future product candidates.

Additionally, if any of our product candidates receives marketing approval, the FDA could require us to adopt a Risk Evaluation and Mitigation Strategy to ensure that the benefits of the product outweigh its risks, which may include, for example, a Medication Guide outlining the risks of the product for distribution to patients and a communication plan to health care practitioners, or other elements to assure safe use of the product. Furthermore, if we or others later identify undesirable side effects caused by our product candidate, several potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals of such product candidate;
- regulatory authorities may require additional warnings on the label;
- we may be required to change the way a product candidate is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these occurrences may harm our business, financial condition, results of operations and prospects significantly.

A Fast Track Designation by the FDA, even if granted for STK-001 or any of our future product candidates, may not lead to a faster development or regulatory review or approval process, and does not increase the likelihood that our product candidates will receive marketing approval.

We may seek Fast Track Designation for STK-001 or our future product candidates. If a drug is intended for the treatment of a serious or life-threatening condition and the drug demonstrates the potential to address unmet medical needs for this condition, the drug sponsor may apply to the FDA for Fast Track Designation. The FDA has broad discretion whether to grant this designation. Even if we believe a particular product candidate is eligible for this designation, we cannot assure you that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review or approval compared to conventional FDA procedures. The FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program. Many drugs that have received Fast Track Designation have failed to obtain approval.

We may also seek accelerated approval for product candidates that have obtained Fast Track Designation. Under the FDA's accelerated approval program, the FDA may approve a drug for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. For drugs granted accelerated approval, post-marketing confirmatory trials are required to describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. These confirmatory trials must be completed with due diligence and, in some cases, the FDA may require that the trial be designed and/or initiated prior to approval. Moreover,

the FDA may withdraw approval of any product candidate or indication approved under the accelerated approval pathway if, for example:

- the trial or trials required to verify the predicted clinical benefit of the product candidate fail to verify such benefit or do not demonstrate sufficient clinical benefit to justify the risks associated with the drug;
- other evidence demonstrates that the product candidate is not shown to be safe or effective under the conditions of use;
- we fail to conduct any required post-approval trial of the product candidate with due diligence; or
- we disseminate false or misleading promotional materials relating to the product candidate.

A Breakthrough Therapy Designation by the FDA for STK-001 or our future product candidates may not lead to a faster development or regulatory review or approval process, and it would not increase the likelihood that the product candidate will receive marketing approval.

We may seek a Breakthrough Therapy Designation for STK-001 or one or more of our future product candidates. A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For drugs that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Drugs designated as breakthrough therapies by the FDA are also eligible for priority review if supported by clinical data at the time of the submission of the NDA.

Designation as a breakthrough therapy is at the discretion of the FDA. Accordingly, even if we believe that one of our product candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a Breakthrough Therapy Designation for a drug may not result in a faster development process, review, or approval compared to drugs considered for approval under conventional FDA procedures and it would not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as breakthrough therapies, the FDA may later decide that the product candidate no longer meets the conditions for qualification or it may decide that the time period for FDA review or approval will not be shortened.

Enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval of and commercialize our product candidates and may affect the prices we may set.

Existing regulatory policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained and we may not achieve or sustain profitability.

For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively the Affordable Care Act, or the ACA, was enacted to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for health care and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. As implementation of the ACA is ongoing, the law appears likely to continue the downward pressure on

pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs. The current U.S. presidential administration and U.S. Congress have sought, and we expect they will continue to, seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. Since January 2017, the current U.S. presidential administration has issued two executive orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. For example, on October 12, 2017, the current U.S. presidential administration issued an executive order that expands the use of association health plans and allows anyone to purchase short-term health plans that provide temporary, limited insurance. This executive order also calls for the halt of federal payments to health insurers for cost-sharing reductions previously available to lower-income Americans to afford coverage. There is uncertainty with respect to which legislation, if any, will be enacted and the impact the current U.S. presidential administration may have, if any, and any changes likely will take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us. In addition, other legislative changes have been proposed and adopted since the ACA was enacted. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, effective April 1, 2013, which, due to subsequent legislative amendments, will stay in effect through 2027 unless additional Congressional action is taken. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding, which could have a material adverse effect on customers for our drugs, if approved, and accordingly, our financial operations. Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA authorization under an FDA expanded access program; however, manufacturers are not obligated to provide investigational new drug products under the current federal right to try law. We may choose to seek an expanded access program for our product candidates, or to utilize comparable rules in other countries that allow the use of a drug, on a named patient basis or under a compassionate use program.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our product candidates.

Legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We cannot be sure whether additional legislative changes will be enacted, or whether FDA regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be. In addition, increased scrutiny by the U.S. Congress of the FDA’s approval process may significantly delay or prevent marketing approval, as well as subject us to more stringent product labeling and post-marketing testing and other requirements.

We may be unsuccessful in obtaining Orphan Drug Designation or transfer of designations obtained by others for future product candidates. and, even if we obtain such designation, we may be unable to maintain the benefits associated with Orphan Drug Designation, including the potential for market exclusivity, for STK-001 or our future product candidates.

Regulatory authorities in some jurisdictions, including the United States and Europe, may designate drugs intended to treat relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is intended to treat a rare disease or condition, which is defined as a patient population of fewer than 200,000 individuals in the United States. In the United States, Orphan Drug Designation entitles a party to financial incentives such as opportunities for tax credits for qualified clinical research costs and exemption from prescription drug user fees. Similarly, in the EU, the European Commission grants Orphan Drug Designation after receiving the opinion of the EMA's Committee for Orphan Medicinal Products on an Orphan Drug Designation application. In the EU, Orphan Drug Designation is intended to promote the development of drug that are intended for the diagnosis, prevention or treatment of life-threatening or chronically debilitating conditions affecting not more than five in 10,000 persons in the EU and for which no satisfactory method of diagnosis, prevention or treatment has been authorized (or the product would be a significant benefit to those affected). In the EU, Orphan Drug Designation entitles a party to financial incentives such as reduction of fees or fee waivers.

Generally, if a drug with an Orphan Drug Designation subsequently receives the first marketing approval for the indication for which it has such designation, the drug is entitled to a period of marketing exclusivity, which precludes EMA or the FDA from approving another marketing application for the same drug and indication for that time period, except in limited circumstances. If a competitor is able to obtain orphan drug exclusivity prior to us for a product that constitutes the same active moiety and treats the same indications as our product candidates, we may not be able to obtain approval of our drug by the applicable regulatory authority for a significant period of time unless we are able to show that our drug is clinically superior to the approved drug. The applicable period is seven years in the United States and ten years in the EU. The EU exclusivity period can be reduced to six years if a drug no longer meets the criteria for Orphan Drug Designation or if the drug is sufficiently profitable so that market exclusivity is no longer justified.

As part of our business strategy, we may seek Orphan Drug Designation for STK-001 in the United States, Europe and other countries. However, Orphan Drug Designation does not guarantee future orphan drug marketing exclusivity.

Even after an orphan drug is approved, the FDA can also subsequently approve a later application for the same drug for the same condition if the FDA concludes that the later drug is clinically superior in that it is shown to be safer in a substantial portion of the target populations, more effective or makes a major contribution to patient care. In addition, a designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. Moreover, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if we are unable to manufacture sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process.

A Rare Pediatric Disease designation by the FDA does not guarantee that the NDA for the product will qualify for a priority review voucher upon approval, and it does not lead to a faster development or regulatory review process, or increase the likelihood that STK-001 or any of our future product candidates will receive marketing approval.

Under the Rare Pediatric Disease Priority Review Voucher program, upon the approval of a qualifying NDA for the treatment of a rare pediatric disease, the sponsor of such an application would be eligible for a rare pediatric disease priority review voucher that can be used to obtain priority review for a subsequent Biologics License Application, or BLA, or NDA. We may seek Rare Pediatric Disease designations for STK-001. If a product candidate is designated before October 1, 2020, it is eligible to receive a voucher if it is approved before October 1, 2022. However, there is no expectation that STK-001 or any of our future product candidates will be approved by that date, or at all, and, therefore, we may not be in a position to obtain priority review vouchers prior to expiration of the program, unless Congress further reauthorizes the program. Additionally, designation of a drug for a rare pediatric disease does not guarantee that an NDA will meet the eligibility criteria for a rare pediatric disease priority review voucher at the time the application is approved. Finally, a Rare Pediatric Disease Designation does not lead to faster development or regulatory review of the product, or increase the likelihood that it will receive marketing approval.

The FDA's ability to review and approve new products may be hindered by a variety of factors, including budget and funding levels, ability to hire and retain key personnel, and statutory, regulatory and policy changes.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including budget and funding levels, ability to hire and retain key personnel, and statutory, regulatory, and policy changes. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

The ability of the FDA and other government agencies to properly administer their functions is highly dependent on the levels of government funding and the ability to fill key leadership appointments, among various factors. Currently, the FDA Commissioner position is vacant, pending the appointment of a new Commissioner by the new presidential administration. The confirmation process for a new commissioner may not occur efficiently. Delays in filling or replacing key positions could significantly impact the ability of the FDA and other agencies to fulfill their functions, and could greatly impact healthcare and the pharmaceutical industry.

In December 2016, the 21st Century Cures Act was signed into law, and was designed to advance medical innovation and empower the FDA with the authority to directly hire positions related to drug and device development and review. In the past, the FDA was often unable to offer key leadership candidates (including scientists) competitive compensation packages as compared to those offered by private industry. The 21st Century Cures Act is designed to streamline the agency's hiring process and enable the FDA to compete for leadership talent by expanding the narrow ranges that are provided in the existing compensation structures.

Disruptions at the FDA and other governmental agencies may also slow the time necessary for new drugs to be reviewed or approved by necessary government agencies, which would adversely affect our operating results and business.

Our operations and relationships with future customers, providers and third-party payors will be subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which could expose us to penalties including criminal sanctions, civil penalties, contractual damages, reputational harm and diminished profits and future earnings.

Healthcare providers and third-party payors will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our future arrangements with providers,

third-party payors and customers will subject us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell and distribute any product candidates for which we obtain marketing approval.

Restrictions under applicable U.S. federal and state healthcare laws and regulations include the following:

- the federal Anti-Kickback Statute prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under federal healthcare programs such as Medicare and Medicaid;
- federal false claims laws, including the federal False Claims Act, imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and its implementing regulations, also imposes obligations, including mandatory contractual terms, on certain types of people and entities with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal Physician Payment Sunshine Act requires applicable manufacturers of covered drugs, devices, biologics, and medical supplies for which payment is available under Medicare, Medicaid, or the Children's Health Insurance Program, with specific exceptions, to report payments and other transfers of value to physicians and teaching hospitals, as well as certain ownership and investment interests held by physicians and their immediate family, which includes annual data collection and reporting obligations; and
- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government and may require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, imprisonment, exclusion of product candidates from government-funded healthcare programs, such as Medicare and Medicaid, disgorgement, contractual damages,

reputational harm, diminished profits and future earnings, and the curtailment or restructuring of our operations. If any of the physicians or other healthcare providers or entities with whom we expect to do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government-funded healthcare programs.

Risks related to commercialization and manufacturing

The commercial success of our product candidates, including STK-001, will depend upon their degree of market acceptance by providers, patients, patient advocacy groups, third-party payors and the general medical community.

Ethical, social and legal concerns about genetic treatments generally could result in additional regulations restricting or prohibiting our product candidates. Even with the requisite approvals from the FDA, the EMA and other regulatory authorities internationally, the commercial success of our product candidates will depend, in part, on the acceptance of providers, patients and third-party payors of drugs designed to increase protein expression in general, and our product candidates in particular, as medically necessary, cost-effective and safe. In addition, we may face challenges in seeking to establish and grow sales of STK-001, including acceptance of the lumbar puncture and intrathecal administration, which carries risks of infection or other complications. Any product that we commercialize may not gain acceptance by providers, patients, patient advocacy groups, third-party payors and the general medical community. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenue and may not become profitable. The degree of market acceptance of genetic medicines and, in particular, STK-001 and our future product candidates, if approved for commercial sale, will depend on several factors, including:

- the efficacy, durability and safety of such product candidates as demonstrated in clinical trials;
- the potential and perceived advantages of product candidates over alternative treatments;
- the cost of treatment relative to alternative treatments;
- the clinical indications for which the product candidate is approved by the FDA or the European Commission;
- the willingness of providers to prescribe new therapies;
- the willingness of the target patient population to try new therapies;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of the FDA, EMA or other regulatory authorities, including any limitations or warnings contained in a product's approved labeling;
- the willingness of providers to prescribe, and of patients to receive, intrathecal injections;
- the strength of marketing and distribution support;
- the timing of market introduction of competitive products;
- the quality of our relationships with patient advocacy groups;
- publicity concerning our product candidates or competing products and treatments; and
- sufficient third-party payor coverage and adequate reimbursement.

Even if a potential product displays a favorable efficacy and safety profile in preclinical studies and clinical trials, market acceptance of the product will not be fully known until after it is launched.

The pricing, insurance coverage and reimbursement status of newly approved products is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for our product candidates, if approved, could limit our ability to market those products and decrease our ability to generate product revenue.

Our target indications, including Dravet syndrome, are indications with small patient populations. For product candidates that are designed to treat smaller patient populations to be commercially viable, the reimbursement for such product candidates must be higher, on a relative basis, to account for the lack of volume. Accordingly, we will need to implement a coverage and reimbursement strategy for any approved product candidate that accounts for the smaller potential market size. If we are unable to establish or sustain coverage and adequate reimbursement for any future product candidates from third-party payors, the adoption of those product candidates and sales revenue will be adversely affected, which, in turn, could adversely affect the ability to market or sell those product candidates, if approved.

We expect that coverage and reimbursement by third-party payors will be essential for most patients to be able to afford these treatments. Accordingly, sales of STK-001 and our future product candidates will depend substantially, both domestically and internationally, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or will be reimbursed by government authorities, private health coverage insurers and other third-party payors. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products. In the United States, the principal decisions about reimbursement by government authorities for new products are typically made by the Centers for Medicare & Medicaid Services, or CMS, since CMS decides whether and to what extent a new product will be covered and reimbursed under Medicare. Private payors tend to follow CMS to a substantial degree. However, one payor’s determination to provide coverage for a drug product does not assure that other payors will also provide coverage for the drug product. Further, a payor’s decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Reimbursement agencies in Europe may be more conservative than CMS. For example, a number of cancer drugs have been approved for reimbursement in the United States and have not been approved for reimbursement in certain European countries

Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe, Canada and other countries has and will continue to put pressure on the pricing and usage of therapeutics such as our product candidates. In many countries, particularly the countries of the EU, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product candidate to other available therapies. In general, the prices of products under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for products, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the United States, the reimbursement for our product candidates may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenues and profits.

Moreover, increasing efforts by governmental and third-party payors, in the United States and internationally, to cap or reduce healthcare costs may cause such organizations to limit both coverage and level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment

for our product candidates. We expect to experience pricing pressures in connection with the sale of any of our product candidates due to the trend toward managed healthcare, the increasing influence of certain third-party payors, such as health maintenance organizations, and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products into the healthcare market. Recently there have been instances in which third-party payors have refused to reimburse treatments for patients for whom the treatment is indicated in the FDA-approved product label. Even if we are successful in obtaining FDA approvals to commercialize our product candidates, we cannot guarantee that we will be able to secure reimbursement for all patients for whom treatment with our product candidates is indicated.

In addition to CMS and private payors, professional organizations such as the American Medical Association, or the AMA, can influence decisions about reimbursement for new products by determining standards for care. In addition, many private payors contract with commercial vendors who sell software that provide guidelines that attempt to limit utilization of, and therefore reimbursement for, certain products deemed to provide limited benefit to existing alternatives. Such organizations may set guidelines that limit reimbursement or utilization of our product candidates. Even if favorable coverage and reimbursement status is attained for one or more product candidates for which we or our collaborators receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

If third parties on which we depend to conduct our planned preclinical studies, or any future clinical trials, do not perform as contractually required, fail to satisfy regulatory or legal requirements or miss expected deadlines, our development program could be delayed with adverse effects on our business, financial condition, results of operations and prospects.

We rely on third parties for genetic testing, and on third party contract research organizations, or CROs, contract manufacturing organizations, or CMOs, consultants and others to design, conduct, supervise and monitor key activities relating to, discovery, manufacturing, preclinical studies and clinical trials of our product candidates, and we intend to do the same for future activities relating to existing and future programs. Because we rely on third parties and do not have the ability to conduct all required testing, discovery, manufacturing, preclinical studies or clinical trials independently, we have less control over the timing, quality and other aspects of discovery, manufacturing, preclinical studies and clinical trials than we would if we conducted them on our own. These investigators, CROs, CMOs and consultants are not our employees and we have limited control over the amount of time and resources that they dedicate to our programs. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw time and resources from our programs. The third parties we contract with might not be diligent, careful or timely in conducting our discovery, manufacturing, preclinical studies or clinical trials, resulting in testing, discovery, manufacturing, preclinical studies or clinical trials being delayed or unsuccessful, in whole or in part.

If we cannot contract with acceptable third parties on commercially reasonable terms, or at all, or if these third parties do not carry out their contractual duties, satisfy legal and regulatory requirements for the conduct of preclinical studies or clinical trials or meet expected deadlines, our clinical development programs could be delayed and otherwise adversely affected. In all events, we are responsible for ensuring that each of our preclinical studies and clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. Any such event could have an adverse effect on our business, financial condition, results of operations and prospects.

We face significant competition in an environment of rapid technological change and it is possible that our competitors may achieve regulatory approval before us or develop therapies that are more advanced or effective than ours, which may harm our business, financial condition and our ability to successfully market or commercialize STK-001 and our future product candidates.

The biotechnology and pharmaceutical industries, including the genetic medicine and antisense oligonucleotide fields, are characterized by rapidly changing technologies, competition and a strong emphasis on intellectual property. We are aware of several companies focused on developing ASO treatments in various indications as well as several companies addressing other methods for modifying genes and regulating protein expression. We may also face competition from large and specialty pharmaceutical and biotechnology companies, academic research institutions, government agencies and public and private research institutions.

Although few companies focus treatments on Dravet syndrome, numerous treatments for epilepsy exist, including cannabidiols, such as GW Pharmaceuticals, plc's Epidiolex, GABA receptor agonists, such as clobazam, and glutamate blockers, such as topiramate. In addition, numerous compounds are in clinical development for treatment of epilepsy. We believe the clinical development pipeline includes cannabinoids, 5-HT release stimulants, cholesterol 24-hydroxylase inhibitors, and sodium channel antagonists from a variety of companies. In addition to competition from these small molecule drugs, any products we may develop may also face competition from other types of therapies, such as gene therapy, gene editing, modified mRNA therapies or other ASO approaches.

Many of our potential competitors, alone or with their strategic partners, have substantially greater financial, technical and other resources than we do, such as larger research and development, clinical, marketing and manufacturing organizations. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated among a smaller number of competitors. Our commercial opportunity could be reduced or eliminated if competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any product candidates that we may develop. Competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market, if ever. Additionally, new or advanced technologies developed by our competitors may render our current or future product candidates uneconomical or obsolete, and we may not be successful in marketing our product candidates against competitors.

To become and remain profitable, we must develop and eventually commercialize product candidates with significant market potential, which will require us to be successful in a range of challenging activities. These activities include, among other things, completing preclinical studies and initiating and completing clinical trials of our product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing and selling those products that are approved and satisfying any post marketing requirements. We may never succeed in any or all of these activities and, even if we do, we may never generate revenues that are significant or large enough to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our company also could cause you to lose all or part of your investment.

The manufacture of drugs is complex and our third-party manufacturers may encounter difficulties in production. If any of our third-party manufacturers encounter such difficulties, our ability to provide supply of STK-001 or our future product candidates for clinical trials, our ability to obtain marketing approval, or our ability to provide supply of our product candidates for patients, if approved, could be delayed or stopped.

We have established manufacturing relationships with a limited number of suppliers to manufacture raw materials and the drug substance of any product candidate for which we are responsible for preclinical or clinical development. Each supplier may require licenses to manufacture such components if such processes are not owned by the supplier or in the public domain. As part of any marketing approval, a manufacturer and its processes are required to be qualified by the FDA prior to commercialization. If supply from the approved vendor is interrupted, there could be a significant disruption in commercial supply. An alternative vendor would need to be qualified through an NDA supplement which could result in further delay. The FDA or other regulatory agencies outside of the United States may also require additional studies if a new supplier is relied upon for commercial production. Switching vendors may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

The process of manufacturing drugs is complex, highly-regulated and subject to multiple risks. Manufacturing drugs is highly susceptible to product loss due to contamination, equipment failure, improper installation or operation of equipment, vendor or operator error, inconsistency in yields, variability in product characteristics and difficulties in scaling the production process. Even minor deviations from normal manufacturing processes could result in reduced production yields, product defects and other supply disruptions. If microbial, viral or other contaminations are discovered at the facilities of our manufacturers, such facilities may need to be closed for an extended period of time to investigate and remedy the contamination, which could delay clinical trials and adversely harm our business. Moreover, if the FDA determines that our manufacturers are not in compliance with FDA laws and regulations, including those governing cGMPs, the FDA may deny NDA approval until the deficiencies are corrected or we replace the manufacturer in our NDA with a manufacturer that is in compliance.

In addition, there are risks associated with large scale manufacturing for clinical trials or commercial scale including, among others, cost overruns, potential problems with process scale-up, process reproducibility, stability issues, compliance with good manufacturing practices, lot consistency and timely availability of raw materials. Even if we or our collaborators obtain regulatory approval for any of our product candidates, there is no assurance that manufacturers will be able to manufacture the approved product to specifications acceptable to the FDA or other regulatory authorities, to produce it in sufficient quantities to meet the requirements for the potential launch of the product or to meet potential future demand. If our manufacturers are unable to produce sufficient quantities for clinical trials or for commercialization, commercialization efforts would be impaired, which would have an adverse effect on our business, financial condition, results of operations and prospects.

Our reliance on a limited number of manufacturers, the complexity of drug manufacturing and the difficulty of scaling up a manufacturing process could cause the delay of clinical trials, regulatory submissions, required approvals or commercialization of our product candidates, cause us to incur higher costs and prevent us from commercializing our product candidates successfully. Furthermore, if our suppliers fail to deliver the required commercial quantities of materials on a timely basis and at commercially reasonable prices, and we are unable to secure one or more replacement suppliers capable of production in a timely manner at a substantially equivalent cost, our clinical trials may be delayed or we could lose potential revenue.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell STK-001 and our future product candidates, we may be unable to generate any revenues.

We currently do not have an organization for the sales, marketing and distribution of STK-001 and our future product candidates and the cost of establishing and maintaining such an organization may exceed the cost-effectiveness of doing so. To market any products that may be approved, we must build our sales, marketing, managerial and other non-technical capabilities or make arrangements with third parties to perform these services. With respect to certain of our current programs as well as future programs, we may rely completely on an alliance partner for sales and marketing. In addition, although we intend to establish a sales organization if we are able to obtain approval to market any product candidates, we may enter into strategic alliances with third parties to develop and commercialize STK-001 and other future product candidates, including in markets outside of the United States or for other large markets that are beyond our resources. This will reduce the revenue generated from the sales of these products.

Any future strategic alliance partners may not dedicate sufficient resources to the commercialization of our product candidates or may otherwise fail in their commercialization due to factors beyond our control. If we are unable to establish effective alliances to enable the sale of our product candidates to healthcare professionals and in geographical regions, including the United States, that will not be covered by our own marketing and sales force, or if our potential future strategic alliance partners do not successfully commercialize the product candidates, our ability to generate revenues from product sales will be adversely affected.

If we are unable to establish adequate sales, marketing and distribution capabilities, whether independently or with third parties, we may not be able to generate sufficient product revenue and may not become profitable. We will be competing with many companies that currently have extensive and well-funded marketing and sales operations. Without an internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to timely capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

We may not be successful in finding strategic collaborators for continuing development of certain of our future product candidates or successfully commercializing or competing in the market for certain indications.

In the future, we may decide to collaborate with non-profit organizations, universities, pharmaceutical and biotechnology companies for the development and potential commercialization of existing and new product candidates. We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator’s resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator’s evaluation of a number of factors. Those factors may include the design or results of clinical

trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing drugs, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. The terms of any additional collaborations or other arrangements that we may establish may not be favorable to us. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

The success of any potential collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Collaborators generally have significant discretion in determining the efforts and resources that they will apply to these collaborations. Disagreements between parties to a collaboration arrangement regarding clinical development and commercialization matters can lead to delays in the development process or commercializing the applicable product candidate and, in some cases, termination of such collaboration arrangements. These disagreements can be difficult to resolve if neither of the parties has final decision-making authority. Collaborations with pharmaceutical or biotechnology companies and other third parties often are terminated or allowed to expire by the other party. Any such termination or expiration would adversely affect us financially and could harm our business reputation.

Risks related to our financial position

We have a history of operating losses, and we may not achieve or sustain profitability. We anticipate that we will continue to incur losses for the foreseeable future. If we fail to obtain additional funding to conduct our planned research and development effort, we could be forced to delay, reduce or eliminate our product development programs or commercial development efforts.

We are an early-stage biotechnology company with a limited operating history on which to base your investment decision. Biotechnology product development is a highly speculative undertaking and involves a substantial degree of risk. Our operations to date have been limited primarily to organizing and staffing our company, business planning, raising capital, acquiring and developing product and technology rights, manufacturing, and conducting research and development activities for our product candidates. We have never generated any revenue from product sales. We have not obtained regulatory approvals for any of our product candidates, and have funded our operations to date through proceeds from sales of our preferred stock and common stock.

We have incurred net losses in each year since our inception. We incurred a net loss of $12.5 million and $5.6 million for the years ended December 31, 2018 and 2017, respectively. As of December 31, 2018, we had an

accumulated deficit of $25.7 million. Substantially all of our operating losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to continue to incur significant expenses and operating losses over the next several years and for the foreseeable future as we intend to continue to conduct research and development, clinical testing, regulatory compliance activities, manufacturing activities, and, if any of our product candidates is approved, sales and marketing activities that, together with anticipated general and administrative expenses, will likely result in us incurring significant losses for the foreseeable future. Our prior losses, combined with expected future losses, have had and will continue to have an adverse effect on our stockholders' equity and working capital.

We expect that we will need to raise additional funding before we can expect to become profitable from any potential future sales of STK-001 or our future product candidates. This additional financing may not be available on acceptable terms or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We will require substantial future capital in order to complete planned and future preclinical and clinical development for STK-001 and other future product candidates, if any, and potentially commercialize these product candidates. Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash, cash equivalents and restricted cash as of December 31, 2018, will enable us to fund our operating expenses and capital expenditure requirements through the end of 2022. We expect our spending levels to increase in connection with our preclinical studies and clinical trials of our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant expenses related to commercial launch, product sales, medical affairs, marketing, manufacturing and distribution. Furthermore, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce or eliminate certain of our licensing activities, our research and development programs or other operations.

Additional capital might not be available when we need it and our actual cash requirements might be greater than anticipated. If we require additional capital at a time when investment in our industry or in the marketplace in general is limited, we might not be able to raise funding on favorable terms if at all. If we are not able to obtain financing on terms favorable to us, we may need to cease or reduce development or commercialization activities, sell some or all of our assets or merge with another entity, which could result in a loss of all or part of your investment.

Our operations have consumed significant amounts of cash since inception. As of December 31, 2018, our cash, cash equivalents and restricted cash were $105.6 million.

Our future capital requirements will depend on many factors, including:

- the costs associated with the scope, progress and results of discovery, preclinical development, laboratory testing and clinical trials for our product candidates;
- the costs associated with the development of our internal manufacturing facility and processes;
- the costs related to the extent to which we enter into partnerships or other arrangements with third parties to further develop our product candidates;
- the costs and fees associated with the discovery, acquisition or in-license of product candidates or technologies;

- our ability to establish collaborations on favorable terms, if at all;
- the costs of future commercialization activities, if any, including product sales, marketing, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval; and
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims.

Our product candidates, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of product candidates that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives, which may not be available to us on acceptable terms, or at all.

Our limited operating history may make it difficult for you to evaluate the success of our business to date and to assess our future viability.

We are an early-stage biotechnology company formed in June 2014. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, acquiring our technology, identifying potential product candidates, undertaking research and preclinical studies of our product candidates, manufacturing, and establishing licensing arrangements. We have not yet demonstrated the ability to complete clinical trials of our product candidates, obtain marketing approvals, manufacture a commercial scale product or conduct sales and marketing activities necessary for successful commercialization. Consequently, any predictions you make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, as a new business, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors. We will need to transition from a company with a licensing and research focus to a company that is also capable of supporting clinical development and commercial activities. We may not be successful in such a transition.

Our ability to utilize our net operating loss carryforwards may be subject to limitations.

We have incurred substantial losses during our history and do not expect to become profitable in the near future and we may never achieve profitability. As of December 31, 2018, we had federal and state net operating loss carryforwards, or NOLs, of approximately $24.4 million and $24.0 million, respectively, which expire on various dates beginning in 2034 for those net operating loss carryforwards generated prior to 2018. Net operating losses generated in 2018 and beyond have no expiration. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses expire. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an “ownership change,” generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation’s ability to use its pre-change NOLs and other pre-change tax attributes (such as research tax credits) to offset its post-change income may be limited. We may have experienced one or more ownership changes in prior years, and we may experience ownership changes in the future as a result of subsequent shifts in our stock ownership. As a result, if we earn net taxable income, our ability to use our pre-change NOLs to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

U.S. federal income tax reform and changes in other tax laws could adversely affect us.

In December 2017, U.S. federal tax legislation, commonly referred to as the Tax Cuts and Jobs Act, or the TCJA, was signed into law, significantly reforming the Code. The TCJA, among other things, includes changes to U.S. federal tax rates, imposes significant additional limitations on the deductibility of business interest, allows for the expensing of capital expenditures, puts into effect the migration from a "worldwide" system of taxation to a partial "territorial" system, and modifies or repeals many business deductions and credits.

We continue to examine the impact the TCJA may have on our business. The TCJA is a far-reaching and complex revision to the U.S. federal income tax laws with disparate and, in some cases, countervailing impacts on different categories of taxpayers and industries, and will require subsequent rulemaking and interpretation in a number of areas. The long-term impact of the TCJA on the overall economy, the industries in which we operate and our and our partners' businesses cannot be reliably predicted at this early stage of the new law's implementation. There can be no assurance that the TCJA will not negatively impact our operating results, financial condition, and future business operations. The estimated impact of the TCJA is based on our management's current knowledge and assumptions, following consultation with our tax advisors. Because of our valuation allowance in the U.S., ongoing tax effects of the Act are not expected to materially change our effective tax rate in future periods.

In addition, new legislation or regulation which could affect our tax burden could be enacted by any governmental authority. We cannot predict the timing or extent of such tax-related developments which could have a negative impact on our financial results. Additionally, we use our best judgment in attempting to quantify and reserve for these tax obligations. However, a challenge by a taxing authority, our ability to utilize tax benefits such as carryforwards or tax credits, or a deviation from other tax-related assumptions could have a material adverse effect on our business, results of operations, or financial condition.

Risks related to our intellectual property

Our success depends in part on our ability to obtain, maintain and protect our intellectual property. It is difficult and costly to protect our proprietary rights and technology, and we may not be able to ensure their protection.

Our commercial success will depend in large part on obtaining and maintaining patent, trademark, trade secret and other intellectual property protection of our proprietary technologies and product candidates, which include TANGO, STK-001 and the additional gene targets identified by TANGO, their respective components, formulations, combination therapies, methods used to manufacture them and methods of treatment, as well as successfully defending our patents and other intellectual property rights against third-party challenges. Our ability to stop unauthorized third parties from making, using, selling, offering to sell, importing or otherwise commercializing our product candidates is dependent upon the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities. If we are unable to secure and maintain patent protection for any product or technology we develop, or if the scope of the patent protection secured is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to commercialize any product candidates we may develop may be adversely affected.

The patenting process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. In addition, we may not pursue or obtain patent protection in all relevant markets. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from or license to third

parties and are reliant on our licensors or licensees to do so. Our pending and future patent applications may not result in issued patents. Even if patent applications we license or own currently or in the future issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Any patents that we hold or in-license may be challenged, narrowed, circumvented, or invalidated by third parties. Consequently, we do not know whether any of our platform advances and product candidates will be protectable or remain protected by valid and enforceable patents. In addition, our existing patents and any future patents we obtain may not be sufficiently broad to prevent others from using our technology or from developing competing products and technologies.

We depend on intellectual property licensed from third parties, and our licensors may not always act in our best interest. If we fail to comply with our obligations under our intellectual property licenses, if the licenses are terminated, or if disputes regarding these licenses arise, we could lose significant rights that are important to our business.

We are dependent on patents, know-how and proprietary technology licensed from others. Our licenses to such patents, know-how and proprietary technology may not provide exclusive rights in all relevant fields of use and in all territories in which we may wish to develop or commercialize our products in the future. The agreements under which we license patents, know-how and proprietary technology from others are complex, and certain provisions in such agreements may be susceptible to multiple interpretations.

For example, we are a party to license agreements with Cold Spring Harbor Laboratory and the University of Southampton, pursuant to which we in-license key patent and patent applications for our TANGO platform, STK-001 and future product candidates. For more information regarding these agreements, please see “Business—License agreements.” These agreements impose various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, our licensors may have the right to terminate our license, in which event we would not be able to develop or market our TANGO platform or STK-001 or any other technology or product candidates covered by the intellectual property licensed under these agreements. In addition, we may need to obtain additional licenses from our existing licensors and others to advance our research or allow commercialization of product candidates we may develop. It is possible that we may be unable to obtain any additional licenses at a reasonable cost or on reasonable terms, if at all. In either event, we may be required to expend significant time and resources to redesign our technology, product candidates, or the methods for manufacturing them or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If we are unable to do so, we may be unable to develop or commercialize the affected technology or product candidates.

If we or our licensors fail to adequately protect our licensed intellectual property, our ability to commercialize product candidates could suffer. We do not have complete control over the maintenance, prosecution and litigation of our in-licensed patents and patent applications and may have limited control over future intellectual property that may be in-licensed. For example, we cannot be certain that activities such as the maintenance and prosecution by our licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents and other intellectual property rights. It is possible that our licensors’ infringement proceedings or defense activities may be less vigorous than had we conducted them ourselves, or may not be conducted in accordance with our best interests.

Furthermore, inventions contained within some of our in-licensed patents and patent applications were made using U.S. government funding or other non-governmental funding. We rely on our licensors to ensure compliance with applicable obligations arising from such funding, such as timely reporting, an obligation associated with in-licensed patents and patent applications. The failure of our licensors to meet their obligations may lead to a loss of rights or the unenforceability of relevant patents. For example, the

government could have certain rights in such in-licensed patents, including a non-exclusive license authorizing the government to use the invention or to have others use the invention on its behalf for non-commercial purposes. If the U.S. government then decides to exercise these rights, it is not required to engage us as its contractor in connection with doing so. These rights may also permit the government to exercise march-in rights to use or allow third parties to use the technology covered by such in-licensed patents. The government may also exercise its march-in rights if it determines that action is necessary because we or our licensors failed to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such in-licensed government-funded inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any of the foregoing could harm our business, financial condition, results of operations, and prospects significantly.

In addition, the resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant patents, know-how and proprietary technology, or increase what we believe to be our financial or other obligations under the relevant agreement. Disputes that may arise between us and our licensors regarding intellectual property subject to a license agreement could include disputes regarding:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates and what activities satisfy those diligence obligations; and
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected technology or product candidates. As a result, any termination of or disputes over our intellectual property licenses could result in the loss of our ability to develop and commercialize our TANGO platform, STK-001 or we could lose other significant rights, any of which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

For example, our agreements with certain of our third-party research partners provide that improvements developed in the course of our relationship may be owned solely by either us or our third party research partner, or jointly between us and the third party. If we determine that rights to such improvements owned solely by a research partner or other third party with whom we collaborate are necessary to commercialize our drug candidates or maintain our competitive advantage, we may need to obtain a license from such third party in order to use the improvements and continue developing, manufacturing or marketing our drug candidates. We may not be able to obtain such a license on an exclusive basis, on commercially reasonable terms, or at all, which could prevent us from commercializing our drug candidates or allow our competitors or others the chance to access technology that is important to our business. We also may need the cooperation of any co-owners of our intellectual property in order to enforce such intellectual property against third parties, and such cooperation may not be provided to us.

Our owned and in-licensed patents and patent applications may not provide sufficient protection of our TANGO platform and our STK-001 product candidate and our future product candidates or result in any competitive advantage.

We have in-licensed an issued U.S. patent and patent applications that generally cover the use of STK-001. As of the date of this prospectus, we do not own and have not in-licensed any issued U.S. patents that specifically cover STK-001 or its use. We have applied for patent applications intended to specifically cover STK-001, but we cannot be certain that any of our owned or in-licensed patent applications will issue or that patents that issue from such patent applications will cover or adequately protect STK-001 or that such patents will not be challenged, narrowed, circumvented, invalidated or held unenforceable.

In addition to claims directed toward the technology underlying our TANGO platform, our owned and in-licensed patents and patent applications contain claims directed to compositions of matter on the active pharmaceutical ingredients, or APIs, in our product candidates, as well as methods-of-use directed to the use of an API for a specified treatment. Composition-of-matter patents on the active pharmaceutical ingredient in prescription drug products provide protection without regard to any particular method of use of the API used. Method-of-use patents do not prevent a competitor or other third party from developing or marketing an identical product for an indication that is outside the scope of the patented method. Moreover, with respect to method-of-use patents, even if competitors or other third parties do not actively promote their product for our targeted indications or uses for which we may obtain patents, providers may recommend that patients use these products off-label, or patients may do so themselves. Although off-label use may infringe or contribute to the infringement of method-of-use patents, the practice is common and this type of infringement is difficult to prevent or prosecute.

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. For example, while our patent applications are pending, we may be subject to a third party preissuance submission of prior art to the United States Patent and Trademark Office, or USPTO, or become involved in interference or derivation proceedings, or equivalent proceedings in foreign jurisdictions. Even if patents do successfully issue, third parties may challenge their inventorship, validity, enforceability or scope, including through opposition, revocation, reexamination, post-grant and *inter partes* review proceedings. An adverse determination in any such submission, proceeding or litigation may result in loss of patent rights, loss of exclusivity, or in patent claims being narrowed, invalidated, or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing around our claims. Moreover, some of our owned and in-licensed patents and patent applications may be co-owned with third parties. If we are unable to obtain an exclusive license to any such third-party co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such co-owners of our patents in order to enforce such patents against third parties, and such cooperation may not be provided to us. If the breadth or strength of protection provided by the patent applications we hold with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in development, testing, and regulatory review of new product candidates, the period of time during which we could market our product candidates under patent protection would be reduced.

Since patent applications in the United States and other countries are confidential for a period of time after filing, at any moment in time, we cannot be certain that we were in the past or will be in the future the first to file any patent application related to our product candidates. In addition, some patent applications in the United States may be maintained in secrecy until the patents are issued. As a result, there may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim, and we may be subject to priority disputes. We may be required to disclaim part or all of the term of certain patents or all of the term of certain patent applications. There may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. No assurance can be given that, if challenged, our patents would be declared by a court, patent office or other governmental authority to be valid or enforceable or that even if found valid and enforceable, a competitor's technology or product would be found by a court to infringe our patents. We may analyze patents or patent applications of our competitors that we believe are relevant to our activities, and consider that we are free to operate in relation to our product candidates, but our competitors may achieve issued claims, including in patents we consider to be unrelated, that block our efforts or potentially result in our product candidates or our activities infringing such claims. It is possible that our competitors may have filed, and may in the future file, patent applications covering our products or technology similar to ours. Those patent applications may have priority over our owned and in-licensed patent applications or patents, which could require us to obtain rights to issued patents covering such technologies. The possibility also exists that others will develop products that have the same effect as our product candidates on an independent basis that do not infringe our patents or other intellectual property rights, or will design around the claims of patents that we have had issued that cover our product candidates.

Likewise, our currently owned and in-licensed patents and patent applications, if issued as patents, directed to our proprietary technologies and our product candidates are expected to expire from 2035 through 2040, without taking into account any possible patent term adjustments or extensions. Our earliest in-licensed patents may expire before, or soon after, our first product achieves marketing approval in the United States or foreign jurisdictions. Additionally, we cannot be assured that the USPTO or relevant foreign patent offices will grant any of the pending patent applications we own or in-license currently or in the future. Upon the expiration of our current patents, we may lose the right to exclude others from practicing these inventions. The expiration of these patents could also have a similar material adverse effect on our business, financial condition, results of operations and prospects.

The degree of future protection for our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example:

- others may be able to make or use compounds that are similar to the active compositions of our product candidates but that are not covered by the claims of our patents;
- the active pharmaceutical ingredients in our current product candidates will eventually become commercially available in generic drug products, and no patent protection may be available with regard to formulation or method of use;
- we or our licensors, as the case may be, may fail to meet our obligations to the U.S. government regarding any in-licensed patents and patent applications funded by U.S. government grants, leading to the loss or unenforceability of patent rights;
- we or our licensors, as the case may be, might not have been the first to file patent applications for certain inventions;

- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- it is possible that our pending patent applications will not result in issued patents;
- it is possible that there are prior public disclosures that could invalidate our owned or in-licensed patents, as the case may be, or parts of our owned or in-licensed patents;
- it is possible that others may circumvent our owned or in-licensed patents;
- it is possible that there are unpublished applications or patent applications maintained in secrecy that may later issue with claims covering our product candidates or technology similar to ours;
- the laws of foreign countries may not protect our or our licensors', as the case may be, proprietary rights to the same extent as the laws of the United States;
- the claims of our owned or in-licensed issued patents or patent applications, if and when issued, may not cover our product candidates;
- our owned or in-licensed issued patents may not provide us with any competitive advantages, may be narrowed in scope, or be held invalid or unenforceable as a result of legal challenges by third parties;
- the inventors of our owned or in-licensed patents or patent applications may become involved with competitors, develop products or processes that design around our patents, or become hostile to us or the patents or patent applications on which they are named as inventors;
- it is possible that our owned or in-licensed patents or patent applications omit individual(s) that should be listed as inventor(s) or include individual(s) that should not be listed as inventor(s), which may cause these patents or patents issuing from these patent applications to be held invalid or unenforceable;
- we have engaged in scientific collaborations in the past and will continue to do so in the future and our collaborators may develop adjacent or competing products that are outside the scope of our patents;
- we may not develop additional proprietary technologies for which we can obtain patent protection;
- it is possible that product candidates or diagnostic tests we develop may be covered by third parties' patents or other exclusive rights; or
- the patents of others may have an adverse effect on our business.

Any of the foregoing could have a material adverse effect on our business, financial conditions, results of operations and prospects.

Our strategy of obtaining rights to key technologies through in-licenses may not be successful.

We seek to expand our product candidate pipeline in part by in-licensing the rights to key technologies, including those related to specific gene targets which may be upregulated by TANGO. The future growth of our business will depend in part on our ability to in-license or otherwise acquire the rights to additional product candidates and technologies. Although we have succeeded in licensing technologies from Cold Spring Harbor Laboratory and the University of Southampton in the past, we cannot assure you that we will be able to in-license or acquire the rights to any product candidates or technologies from third parties on acceptable terms or at all.

For example, our agreements with certain of our third party research partners provide that improvements developed in the course of our relationship may be owned solely by either us or our third party research partner, or jointly between us and the third party. If we determine that exclusive rights to such improvements

owned solely by a research partner or other third party with whom we collaborate are necessary to commercialize our drug candidates or maintain our competitive advantage, we may need to obtain an exclusive license from such third party in order to use the improvements and continue developing, manufacturing or marketing our drug candidates. We may not be able to obtain such a license on an exclusive basis, on commercially reasonable terms, or at all, which could prevent us from commercializing our drug candidates or allow our competitors or others the opportunity to access technology that is important to our business. We also may need the cooperation of any co-owners of our intellectual property in order to enforce such intellectual property against third parties, and such cooperation may not be provided to us.

In addition, the in-licensing and acquisition of these technologies is a highly competitive area, and a number of more established companies are also pursuing strategies to license or acquire product candidates or technologies that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to license rights to us. Furthermore, we may be unable to identify suitable product candidates or technologies within our area of focus. If we are unable to successfully obtain rights to suitable product candidates or technologies, our business and prospects could be materially and adversely affected.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to patent protection, we rely upon know-how and trade secret protection, as well as non-disclosure agreements and invention assignment agreements with our employees, consultants and third-parties, to protect our confidential and proprietary information, especially where we do not believe patent protection is appropriate or obtainable.

It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential and not disclosed to third parties, except in certain specified circumstances. In the case of employees, the agreements provide that all inventions conceived by the individual, and that are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. In the case of consultants and other third parties, the agreements provide that all inventions conceived in connection with the services provided are our exclusive property. However, we cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary technology and processes. We have also adopted policies and conduct training that provides guidance on our expectations, and our advice for best practices, in protecting our trade secrets. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches.

In addition to contractual measures, we try to protect the confidential nature of our proprietary information through other appropriate precautions, such as physical and technological security measures. However, trade secrets and know-how can be difficult to protect. These measures may not, for example, in the case of misappropriation of a trade secret by an employee or third party with authorized access, provide adequate protection for our proprietary information. Our security measures may not prevent an employee or consultant from misappropriating our trade secrets and providing them to a competitor, and any recourse we might take against this type of misconduct may not provide an adequate remedy to protect our interests fully. Enforcing a

claim that a party illegally disclosed or misappropriated a trade secret can be difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, trade secrets may be independently developed by others in a manner that could prevent us from receiving legal recourse. If any of our confidential or proprietary information, such as our trade secrets, were to be disclosed or misappropriated, or if any of that information was independently developed by a competitor, our competitive position could be harmed.

In addition, courts outside the United States are sometimes less willing to protect trade secrets. If we choose to go to court to stop a third party from using any of our trade secrets, we may incur substantial costs. Even if we are successful, these types of lawsuits may consume our time and other resources. Although we take steps to protect our proprietary information and trade secrets, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology. As a result, we may not be able to meaningfully protect our trade secrets. Any of the foregoing could have a material adverse effect on our business, financial condition, results of operations and prospects.

Third-party claims of intellectual property infringement may prevent, delay or otherwise interfere with our product discovery and development efforts.

Our commercial success depends in part on our ability to develop, manufacture, market and sell our product candidates and use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property or proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post grant review, and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. We may be exposed to, or threatened with, future litigation by third parties having patent or other intellectual property rights alleging that our product candidates and/or proprietary technologies infringe, misappropriate or otherwise violate their intellectual property rights. Numerous U.S. and foreign issued patents and pending patent applications that are owned by third parties exist in the fields in which we are developing our product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others. Moreover, it is not always clear to industry participants, including us, which patents cover various types of drugs, products or their methods of use or manufacture. Thus, because of the large number of patents issued and patent applications filed in our field, third parties may allege they have patent rights encompassing our product candidates, technologies or methods.

If a third party claims that we infringe, misappropriate or otherwise violate its intellectual property rights, we may face a number of issues, including, but not limited to:

- infringement and other intellectual property claims that, regardless of merit, may be expensive and time-consuming to litigate and may divert our management's attention from our core business;
- substantial damages for infringement, which we may have to pay if a court decides that the product candidate or technology at issue infringes on or violates the third party's rights, and, if the court finds that the infringement was willful, we could be ordered to pay treble damages plus the patent owner's attorneys' fees;
- a court prohibiting us from developing, manufacturing, marketing or selling our product candidates, or from using our proprietary technologies, unless the third party licenses its product rights to us, which it is not required to do, on commercially reasonable terms or at all;
- if a license is available from a third party, we may have to pay substantial royalties, upfront fees and other amounts, and/or grant cross-licenses to intellectual property rights for our product candidates;

- the requirement that we redesign our product candidates or processes so they do not infringe, which may not be possible or may require substantial monetary expenditures and time; and
- there could be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. In addition, any uncertainties resulting from the initiation and continuation of any litigation could have a material adverse effect on our ability to raise the funds necessary to continue our operations or could otherwise have a material adverse effect on our business, financial condition, results of operations and prospects.

Third parties may assert that we are employing their proprietary technology without authorization, including by enforcing its patents against us by filing a patent infringement lawsuit against us. In this regard, patents issued in the United States by law enjoy a presumption of validity that can be rebutted only with evidence that is “clear and convincing,” a heightened standard of proof.

There may be third-party patents of which we are currently unaware with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents.

If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of our product candidates, or materials used in or formed during the manufacturing process, or any final product itself, the holders of those patents may be able to block our ability to commercialize our product candidate unless we obtain a license under the applicable patents, or until those patents were to expire or those patents are finally determined to be invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of that patent may be able to block our ability to develop and commercialize the product candidate unless we obtain a license or until such patent expires or is finally determined to be invalid or unenforceable. In either case, a license may not be available on commercially reasonable terms, or at all, particularly if such patent is owned or controlled by one of our primary competitors. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could significantly harm our business. Even if we obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future product candidates.

Parties making claims against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee time and resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys’ fees for willful infringement, obtain one or more licenses from third parties, pay royalties or redesign our infringing products, which may be impossible or require substantial time and monetary expenditure. We cannot predict whether any license of this nature would be available at all or whether it would be available on commercially reasonable terms. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to

advance our research or allow commercialization of our product candidates and we may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we would be unable to further develop and commercialize our product candidates, which could significantly harm our business.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful and could result in a finding that such patents are unenforceable or invalid.

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that one or more of our patents is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question.

In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. These types of mechanisms include re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). These types of proceedings could result in revocation or amendment to our patents such that they no longer cover our product candidates. The outcome for any particular patent following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we, our patent counsel and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, or if we are otherwise unable to adequately protect our rights, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Defense of these types of claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business.

Conversely, we may choose to challenge the patentability of claims in a third party's U.S. patent by requesting that the USPTO review the patent claims in re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings), or we may choose to challenge a third party's patent in patent opposition proceedings in the European Patent Office, or EPO, or another foreign patent office. Even if successful, the costs of these opposition proceedings could be substantial, and may consume our time or other resources. If we fail to obtain a favorable result at the USPTO, EPO or other patent office then we may be exposed to litigation by a third party alleging that the patent may be infringed by our product candidates or proprietary technologies.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, that perception could have a substantial adverse effect on the price of our common stock. Any of the foregoing could have a material adverse effect on our business financial condition, results of operations and prospects.

We have limited foreign intellectual property rights and may not be able to protect our intellectual property rights throughout the world.

We have limited intellectual property rights outside the United States. Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our

intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection but where enforcement is not as strong as that in the United States. These products may compete with our product candidates in jurisdictions where we do not have any issued patents and our patent claims or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceutical products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products against third parties in violation of our proprietary rights generally. The initiation of proceedings by third parties to challenge the scope or validity of our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Our use of open source software could impose limitations on our ability to commercialize our product candidates.

Our use of open source software could impose limitations on our ability to commercialize our product candidates. Our technology utilizes open source software that contains modules licensed for use from third-party authors under open source licenses. In particular, some of the software that powers TANGO may be provided under license arrangements that allow use of the software for research or other non-commercial purposes. As a result, in the future, as we seek to use our platform in connection with commercially available products, we may be required to license that software under different license terms, which may not be possible on commercially reasonable terms, if at all. If we are unable to license software components on terms that permit its use for commercial purposes, we may be required to replace those software components, which could result in delays, additional cost and additional regulatory approvals.

Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the software code. Some open source licenses contain requirements that we make available source code for modifications or derivative works we create based upon the type of open source software we use. If we combine our proprietary software with open source software in a certain manner, we could, under certain of the open source licenses, be required to release the source code of our proprietary software to the public. This could allow our competitors to create similar products with lower development effort and time, and ultimately could result in a loss of product sales for us. Although we monitor our use of open source software, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that those licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our product candidates. We could be required to seek

licenses from third parties in order to continue offering our product candidates, to re-engineer our product candidates or to discontinue the sale of our product candidates in the event re-engineering cannot be accomplished on a timely basis, any of which could materially and adversely affect our business, financial condition, results of operations and prospects.

Third parties may assert that our employees or consultants have wrongfully used or disclosed confidential information or misappropriated trade secrets.

As is common in the biotechnology and pharmaceutical industries, we employ individuals who were previously employed at universities or other biopharmaceutical or pharmaceutical companies, including our competitors or potential competitors. Although no misappropriation or improper disclosure claims against us are currently pending, and although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of a former employer or other third parties. We may then have to pursue litigation to defend against these claims. If we fail in defending any claims of this nature in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against these types of claims, litigation or other legal proceedings relating to intellectual property claims may cause us to incur significant expenses, and could distract our technical and management personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments, and, if securities analysts or investors perceive these results to be negative, that perception could have a substantial adverse effect on the price of our common stock. This type of litigation or proceeding could substantially increase our operating losses and reduce our resources available for development activities, and we may not have sufficient financial or other resources to adequately conduct this type of litigation or proceedings. For example, some of our competitors may be able to sustain the costs of this type of litigation or proceedings more effectively than we can because of their substantially greater financial resources. In any case, uncertainties resulting from the initiation and continuation of intellectual property litigation or other intellectual property related proceedings could adversely affect our ability to compete in the marketplace.

We may not be successful in obtaining or maintaining necessary rights to product components and processes for our development pipeline through acquisitions and in-licenses.

The growth of our business may depend in part on our ability to acquire, in-license or use third-party proprietary rights.

For example, our product candidates may require specific formulations to work effectively and efficiently, we may develop product candidates containing our compounds and pre-existing pharmaceutical compounds, or we may be required by the FDA or comparable foreign regulatory authorities to provide a companion diagnostic test or tests with our product candidates, any of which could require us to obtain rights to use intellectual property held by third parties. In addition, with respect to any patents we may co-own with third parties, we may require licenses to such co-owners interest to such patents. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify as necessary or important to our business operations. In addition, we may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. Were that to happen, we may need to cease use of the compositions or methods covered by those third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on those intellectual property rights, which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license, it may be non-exclusive, which means that our competitors may

also receive access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology.

Additionally, we sometimes collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. In certain cases, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Even if we hold such an option, we may be unable to negotiate a license from the institution within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to others, potentially blocking our ability to pursue our program.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies that may be more established or have greater resources than we do may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to commercialize our product candidates. More established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. There can be no assurance that we will be able to successfully complete these types of negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to develop or market. If we are unable to successfully obtain rights to required third-party intellectual property or to maintain the existing intellectual property rights we have, we may have to abandon development of certain programs and our business financial condition, results of operations and prospects could suffer.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign patent agencies also require compliance with a number of procedural, documentary, fee payment and other provisions during the patent application process and following the issuance of a patent. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. Were a noncompliance event to occur, our competitors might be able to enter the market, which would have a material adverse effect on our business financial condition, results of operations and prospects.

Changes in patent law in the United States and in non-U.S. jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain.

Past or future patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. For example, in March 2013, under the Leahy-Smith America Invents Act, or America Invents Act, the United States moved from a "first to invent" to a "first-to-file" patent system. Under a "first-to-file" system, assuming the other requirements for

patentability are met, the first inventor to file a patent application generally will be entitled to a patent on the invention regardless of whether another inventor had made the invention earlier. The America Invents Act includes a number of other significant changes to U.S. patent law, including provisions that affect the way patent applications are prosecuted, redefine prior art and establish a new post-grant review system. The effects of these changes are currently unclear as the USPTO continues to promulgate new regulations and procedures in connection with the America Invents Act and many of the substantive changes to patent law, including the “first-to-file” provisions, only became effective in March 2013. In addition, the courts have yet to address many of these provisions and the applicability of the act and new regulations on the specific patents discussed in this filing have not been determined and would need to be reviewed. However, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

Additionally, recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. For example, in the case, *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.,* the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. While we do not believe that any of our owned or in-licensed patents will be found invalid based on this decision, we cannot predict how future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents. Any similar adverse changes in the patent laws of other jurisdictions could also have a material adverse effect on our business, financial condition, results of operations and prospects.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

Patents have a limited lifespan. In the United States, if all maintenance fees are timely paid, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired, we may be open to competition from competitive products, including generics. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting our product candidates might expire before or shortly after we or our partners commercialize those candidates. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

If we do not obtain patent term extension and data exclusivity for any product candidates we may develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we may develop, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, or the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent per product may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, even if we were to seek a patent term extension, it may not be granted because of, for example, the failure to exercise due diligence during the testing phase or regulatory

review process, the failure to apply within applicable deadlines, the failure to apply prior to expiration of relevant patents, or any other failure to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our business, financial condition, results of operations, and prospects could be materially harmed.

We are subject to a variety of privacy and data security laws, and our failure to comply with them could harm our business.

We maintain a large quantity of sensitive information, including confidential business and patient health information in connection with our preclinical studies, and are subject to laws and regulations governing the privacy and security of such information. In the United States, there are numerous federal and state privacy and data security laws and regulations governing the collection, use, disclosure and protection of personal information, including federal and state health information privacy laws, federal and state security breach notification laws, and federal and state consumer protection laws. Each of these laws is subject to varying interpretations and constantly evolving. In May 2018, a new privacy regime, the General Data Protection Regulation, the GDPR, took effect in the European Economic Area, the EEA. The GDPR governs the collection, use, disclosure, transfer or other processing of personal data of European persons. Among other things, the GDPR imposes new requirements regarding the security of personal data and notification of data processing obligations to the competent national data processing authorities, changes the lawful bases on which personal data can be processed, expands the definition of personal data and requires changes to informed consent practices, as well as more detailed notices for clinical trial subjects and investigators. In addition, the GDPR increases the scrutiny of transfers of personal data from clinical trial sites located in the EEA to the United States and other jurisdictions that the European Commission does not recognize as having “adequate” data protection laws, and imposes substantial fines for breaches and violations (up to the greater of €20 million or 4% of our consolidated annual worldwide gross revenue). The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR. Compliance with these and any other applicable privacy and data security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations.

Risks related to employee matters, managing growth and other risks related to our business

We expect to expand our development and regulatory capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of product candidate development and growing our capability to conduct clinical trials. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

We must attract and retain highly skilled employees to succeed.

To succeed, we must recruit, retain, manage and motivate qualified clinical, scientific, technical and management personnel, and we face significant competition for experienced personnel. If we do not succeed in attracting and retaining qualified personnel, particularly at the management level, it could adversely affect our ability to execute our business plan, harm our results of operations and increase our capabilities to successfully commercialize STK-001 and our future product candidates. In particular, we believe that our future success is highly dependent upon the contributions of our senior management, particularly our Chief Executive Officer, Edward M. Kaye, M.D., our Chief Operating Officer and Chief Business Officer, Huw M. Nash, Ph.D., our Chief Medical Officer, Barry S. Ticho, M.D., Ph.D., FACC, and our Co-Founder and Vice President, Head of Biology, Isabel Aznarez, as well as our senior scientists and other members of our senior management team. The loss of services of any of these individuals, who all have at-will employment arrangements with us, could delay or prevent the successful development of our product pipeline, completion of our planned clinical trials or the commercialization of our product candidates, if approved. The competition for qualified personnel in the biotechnology field is intense and as a result, we may be unable to continue to attract and retain qualified personnel necessary for the development of our business or to recruit suitable replacement personnel. In addition, certain members of our senior management team, including our Chief Financial Officer, who joined us in March 2019, have worked together for only a relatively short period of time and it may be difficult to evaluate their effectiveness, on an individual or collective basis, and ability to address future challenges to our business.

Many of the other biotechnology companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high-quality candidates than what we have to offer. If we are unable to continue to attract and retain high-quality personnel, the rate and success at which we can discover and develop product candidates and our business will be limited.

Future acquisitions or strategic alliances could disrupt our business and harm our financial condition and results of operations.

We may acquire additional businesses or drugs, form strategic alliances or create joint ventures with third parties that we believe will complement or augment our existing business. If we acquire businesses with promising markets or technologies, we may not be able to realize the benefit of acquiring such businesses if we are unable to successfully integrate them with our existing operations and company culture. We may encounter numerous difficulties in developing, manufacturing and marketing any new drugs resulting from a strategic alliance or acquisition that delay or prevent us from realizing their expected benefits or enhancing our business. We cannot assure you that, following any such acquisition, we will achieve the expected synergies to justify the transaction. The risks we face in connection with acquisitions, include:

- diversion of management time and focus from operating our business to addressing acquisition integration challenges;
- coordination of research and development efforts;
- retention of key employees from the acquired company;
- changes in relationships with strategic partners as a result of product acquisitions or strategic positioning resulting from the acquisition;
- cultural challenges associated with integrating employees from the acquired company into our organization;
- the need to implement or improve controls, procedures, and policies at a business that prior to the acquisition may have lacked sufficiently effective controls, procedures and policies;

- liability for activities of the acquired company before the acquisition, including intellectual property infringement claims, violation of laws, commercial disputes, tax liabilities, and other known liabilities;
- unanticipated write-offs or charges; and
- litigation or other claims in connection with the acquired company, including claims from terminated employees, customers, former stockholders or other third parties.

Our failure to address these risks or other problems encountered in connection with our past or future acquisitions or strategic alliances could cause us to fail to realize the anticipated benefits of these transactions, cause us to incur unanticipated liabilities and harm the business generally. There is also a risk that future acquisitions will result in the incurrence of debt, contingent liabilities, amortization expenses or incremental operating expenses, any of which could harm our financial condition or results of operations.

If we fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business.

We will become subject to numerous environmental, health, and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment, and disposal of hazardous materials and wastes. Our operations will involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also may produce hazardous waste products. We generally anticipate contracting with third parties for the disposal of these materials and wastes. We will not be able to eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from any use by us of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities.

In addition, we may incur substantial costs in order to comply with current or future environmental, health, and safety laws and regulations. These current or future laws and regulations may impair our research, development, or production efforts. Our failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

Unfavorable global economic conditions could adversely affect our business, financial condition, stock price and results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. For example, the global financial crisis caused extreme volatility and disruptions in the capital and credit markets. A severe or prolonged economic downturn, such as the 2008 global financial crisis, could result in a variety of risks to our business, including, weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly, and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive such difficult economic times, which could directly affect our ability to attain our operating goals on

schedule and on budget. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business. Furthermore, our stock price may decline due in part to the volatility of the stock market and any general economic downturn.

We or the third parties upon whom we depend may be adversely affected by natural disasters and our business continuity and disaster recovery plans may not adequately protect us from a serious disaster.

Natural disasters could severely disrupt our operations and have a material adverse effect on our business, results of operations, financial condition and prospects. If a natural disaster, fire, hurricane, power outage or other event occurred that prevented us from using all or a significant portion of our headquarters, that damaged critical infrastructure, such as our suppliers' manufacturing facilities, or that otherwise disrupted operations, it may be difficult or, in certain cases, impossible for us to continue our business for a substantial period of time.

The disaster recovery and business continuity plans we have in place may prove inadequate in the event of a serious disaster or similar event. We may incur substantial expenses as a result of the limited nature of our disaster recovery and business continuity plans, which could have a material adverse effect on our business.

Our internal computer and information systems, or those used by our CROs, CMOs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our development programs.

Despite the implementation of appropriate security measures, our internal computer and information systems and those of our current and any future CROs, CMOs and other contractors or consultants may become vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, or accident, and are unaware of any security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of data from completed or future preclinical studies or clinical trials could result in significant delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be significantly delayed.

We may be unable to adequately protect our information systems from cyberattacks, which could result in the disclosure of confidential information, damage our reputation, and subject us to significant financial and legal exposure.

Cyberattacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyberattacks could include wrongful conduct by hostile foreign governments, industrial espionage, wire fraud and other forms of cyber fraud, the deployment of harmful malware, denial-of-service, social engineering fraud or other means to threaten data confidentiality, integrity and availability. A successful cyberattack could cause serious negative consequences for us, including, without limitation, the disruption of operations, the misappropriation of confidential business information, including financial information, trade secrets, financial loss and the disclosure of corporate strategic plans. To date, we have not experienced a material compromise of our data or information systems. However, although we devote resources to protect our information systems, we realize that cyberattacks are a threat, and there can be no assurance that our efforts will prevent information security breaches that would result in business, legal, financial or reputational harm to us, or would have a material adverse effect on our results of operations and financial condition.

In addition, the computer systems of various third parties on which we rely, including our CROs, CMOs and other contractors, consultants and law and accounting firms, may sustain damage from computer viruses, unauthorized access, data breaches, phishing attacks, cybercriminals, natural disasters (including hurricanes and earthquakes), terrorism, war and telecommunication and electrical failures. We rely on our third-party providers to implement effective security measures and identify and correct for any such failures, deficiencies or breaches.

Our employees, principal investigators, CROs, CMOs and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with the regulations of FDA and non-U.S. regulators, provide accurate information to the FDA and non-U.S. regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the improper use of information obtained in the course of clinical studies, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

Our business entails a significant risk of product liability and our ability to obtain sufficient insurance coverage could have a material and adverse effect on our business, financial condition, results of operations and prospects.

We will face an inherent risk of product liability exposure related to the testing of STK-001 and our future product candidates in clinical trials and will face an even greater risk if we commercialize any of our product candidates. If we cannot successfully defend ourselves against claims that our product candidates caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant time and costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize any product candidates that we may develop.

While we currently have product liability insurance that we believe is appropriate for our stage of development, we may need to obtain higher levels prior to clinical development or marketing STK-001 or any of our future product candidates. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to obtain sufficient insurance at a reasonable cost to protect us against losses caused by product liability claims that could have a material and adverse effect on our business, financial condition, results of operations and prospects.

Risks related to our common stock and this offering

The market price of our stock may be volatile, and you could lose all or part of your investment.

The trading price of our common stock following this offering is likely to be highly volatile and subject to wide fluctuations in response to various factors, some of which we cannot control. As a result of this volatility, investors may not be able to sell their common stock at or above the initial public offering price. The market price for our common stock may be influenced by many factors, including the other risks described in this section of the prospectus entitled “Risk factors” and the following:

- results of preclinical studies and clinical trials of our product candidates, or those of our competitors or our existing or future collaborators;
- regulatory or legal developments in the United States and other countries, especially changes in laws or regulations applicable to our product candidates;
- the success of competitive products or technologies;
- introductions and announcements of new products by us, our future commercialization partners, or our competitors, and the timing of these introductions or announcements;
- actions taken by regulatory agencies with respect to our product candidates, clinical studies, manufacturing process or sales and marketing terms;
- actual or anticipated variations in our financial results or those of companies that are perceived to be similar to us;
- the success of our efforts to acquire or in-license additional technologies, products or product candidates;
- developments concerning any future collaborations, including but not limited to those with our sources of manufacturing supply and our commercialization partners;
- market conditions in the pharmaceutical and biotechnology sectors;
- announcements by us or our competitors of significant acquisitions, strategic collaborations, joint ventures or capital commitments;
- developments or disputes concerning patents or other proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our product candidates and products;
- our ability or inability to raise additional capital and the terms on which we raise it;
- the recruitment or departure of key personnel;
- changes in the structure of healthcare payment systems;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;

- our failure or the failure of our competitors to meet analysts' projections or guidance that we or our competitors may give to the market;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- announcement and expectation of additional financing efforts;
- speculation in the press or investment community;
- trading volume of our common stock;
- sales of our common stock by us or our stockholders;
- the concentrated ownership of our common stock;
- changes in accounting principles;
- terrorist acts, acts of war or periods of widespread civil unrest;
- natural disasters and other calamities; and
- general economic, industry and market conditions.

In addition, the stock market in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme price and volume fluctuations that have been often unrelated or disproportionate to the operating performance of the issuer. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our actual operating performance. The realization of any of the above risks or any of a broad range of other risks, including those described in this "Risk factors" section, could have a dramatic and adverse impact on the market price of our common stock.

You will experience immediate and substantial dilution as a result of this offering and may experience additional dilution in the future.

If you purchase common stock in this offering, assuming an initial public offering price of $ per share, the midpoint of the estimated price range set forth on the cover of this prospectus, you will incur immediate and substantial dilution of $ per share, representing the difference between the assumed initial public offering price of $ share and our pro forma net tangible book value per share as of December 31, 2018 after giving effect to this offering and the conversion of all outstanding shares of our redeemable convertible preferred stock upon the completion of this offering.

Moreover, we issued options in the past to acquire common stock at prices below the assumed initial public offering price. As of December 31, 2018, there were 34,663,530 shares of common stock subject to outstanding options under our 2014 Equity Incentive Plan. To the extent that these outstanding options and options granted in the future are ultimately exercised, you will incur further dilution.

An active and liquid trading market for our common stock may not develop and you may not be able to resell your shares of common stock at or above the public offering price.

Prior to this offering, no market for shares of our common stock existed and an active trading market for our shares may never develop or be sustained following this offering. The initial public offering price for our common stock will be determined through negotiations with the underwriters and the negotiated price may not be indicative of the market price of our common stock after this offering. The market value of our common stock may decrease from the initial public offering price. As a result of these and other factors, you may be

unable to resell your shares of our common stock at or above the initial public offering price. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair market value of your shares. Furthermore, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic collaborations or acquire companies or products by using our shares of common stock as consideration. Further, Apple Tree Partners IV, L.P, together with its affiliates, or Apple Tree, owned approximately 66% of our outstanding capital stock as of December 31, 2018, and the sales of stock by Apple Tree, or the lack thereof, may have a material adverse effect on our stock price and trading volume.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Based on the beneficial ownership of our common stock as of December 31, 2018, prior to this, our executive officers, directors and affiliates beneficially owned approximately % of our voting stock and, upon the completion of this offering, that same group will hold approximately % of our outstanding voting stock (assuming no exercise of the underwriters' option to purchase additional shares, no exercise of outstanding options or warrants and no purchases of shares in this offering by any of this group), in each case assuming the conversion of all outstanding shares of our redeemable convertible preferred stock into shares of our common stock and the net exercise of warrants outstanding that would otherwise expire upon the completion of this offering. As a result, these stockholders, if acting together, will continue to have significant influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, amendment of our organizational documents, any merger, consolidation or sale of all or substantially all of our assets and any other significant corporate transaction. The interests of these stockholders may not be the same as or may even conflict with your interests. For example, these stockholders could delay or prevent a change of control of our company, even if such a change of control would benefit our other stockholders, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of our company or our assets and might affect the prevailing market price of our common stock. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

A sale of a substantial number of shares of our common stock may cause the price of our common stock to decline.

Based on shares outstanding as of December 31, 2018, upon completion of this offering, we will have outstanding a total of shares of common stock. Of these shares, only shares of common stock sold in this offering, or shares if the underwriters exercise their option to purchase additional shares in full, will be freely tradable, without restriction, in the public market immediately after this offering. Each of our officers, directors and substantially all of our stockholders have entered or will enter into lock-up agreements with the underwriters that restrict their ability to sell or transfer their shares. The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus. However, our underwriters may, in their sole discretion, permit our officers, directors and other current stockholders who are subject to the contractual lock-up to sell shares prior to the expiration of the lock-up agreements. After the lock-up agreements expire, based on shares outstanding as of December 31, 2018, up to an additional shares of common stock will be eligible for sale in the public market, approximately of which are held by our officers, directors and their affiliated entities, and will be subject to volume limitations under Rule 144 under the Securities Act. In addition, 34,663,530 shares of our common stock that are subject to outstanding options as of December 31, 2018 will become eligible for sale in the public market to the extent permitted by the provisions of various vesting agreements, the lock-up agreements and Rules 144 and 701 under the Securities Act.

After this offering, the holders of an aggregate of 225,584,874 shares of our outstanding common stock as of December 31, 2018 will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or our stockholders. We also intend to register shares of common stock that we may issue under our equity incentive plans. Once we register these shares, they will be able to be sold freely in the public market upon issuance, subject to the 180-day lock-up period under the lock-up agreements described above and in the section entitled “Underwriting.”

We cannot predict what effect, if any, sales of our shares in the public market or the availability of shares for sale will have on the market price of our common stock. However, future sales of substantial amounts of our common stock in the public market, including shares issued upon exercise of outstanding options or warrants, or the perception that such sales may occur, could adversely affect the market price of our common stock.

We also expect that significant additional capital may be needed in the future to continue our planned operations. To raise capital, we may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, and you will be relying on the judgment of our management regarding the application of these proceeds. You will not have the opportunity, as part of your investment decision, to assess whether we are using the proceeds appropriately. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

If securities or industry analysts do not publish research or reports about our business, or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. We do not currently have and may never obtain research coverage by securities and industry analysts. If no or few securities or industry analysts commence coverage of us, the trading price for our common stock could be impacted negatively. In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if our preclinical studies and clinical trials and results of operations fail to meet the expectations of analysts, our stock price would likely decline. If one or more of such analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause a decline in our stock price or trading volume.

The future sale and issuance of equity or of debt securities that are convertible into equity will dilute our share capital.

We may choose to raise additional capital in the future, depending on market conditions, strategic considerations and operational requirements. To the extent that additional capital is raised through the sale and issuance of shares or other securities convertible into shares, our stockholders will be diluted. Future issuances of our common stock or other equity securities, or the perception that such sales may occur, could adversely affect the trading price of our common stock and impair our ability to raise capital through future

offerings of shares or equity securities. No prediction can be made as to the effect, if any, that future sales of common stock or the availability of common stock for future sales will have on the trading price of our common stock.

We are an "emerging growth company" and a "smaller reporting company" and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company" as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including (i) not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, (ii) reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and (iii) exemptions from the requirements of holding nonbinding advisory stockholder votes on executive compensation and stockholder approval of any golden parachute payments not approved previously. In addition, as an emerging growth company, we are only required to provide two years of audited financial statements and two years of selected financial data in this prospectus.

We could be an emerging growth company for up to five years following the completion of this offering, although circumstances could cause us to lose that status earlier, including if we are deemed to be a "large accelerated filer," which occurs when the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30, or if we have total annual gross revenue of $1.07 billion or more during any fiscal year before that time, in which cases we would no longer be an emerging growth company as of the following December 31, or if we issue more than $1.0 billion in non-convertible debt during the prior three-year period before that time, in which case we would no longer be an emerging growth company immediately. Even after we no longer qualify as an emerging growth company, we may still qualify as a "smaller reporting company," as such term is defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, which would allow us to take advantage of many of the same exemptions from disclosure requirements, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in this prospectus and in our periodic reports and proxy statements. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our share price may be more volatile.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to take advantage of the benefits of this extended transition period. Our consolidated financial statements may therefore not be comparable to those of companies that comply with such new or revised accounting standards. Until the date that we are no longer an "emerging growth company" or affirmatively and irrevocably opt out of the exemption provided by Section 7(a)(2)(B) of the Securities Act, upon issuance of a new or revised accounting standard that applies to our consolidated financial statements and that has a different effective date for public and private companies, we will disclose the date on which adoption is required for non-emerging growth companies and the date on which we will adopt the recently issued accounting standard.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700 million and our annual revenue is less than $100 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than $250 million or (ii) our annual revenue is less than $100 million during the most recently completed

fiscal year and the market value of our stock held by non-affiliates is less than $700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Our restated certificate of incorporation and our restated bylaws that will be in effect upon completion of this offering contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors who are not nominated by current members of our board of directors or take other corporate actions, including effecting changes in our management. These provisions:

- establish a classified board of directors so that not all members of our board are elected at one time;
- permit only the board of directors to establish the number of directors and fill vacancies on the board;
- provide that directors may only be removed “for cause” and only with the approval of two-thirds of our stockholders;
- require super-majority voting to amend some provisions in our restated certificate of incorporation and restated bylaws;
- authorize the issuance of “blank check” preferred stock that our board could use to implement a stockholder rights plan;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- prohibit cumulative voting; and
- establish advance notice requirements for nominations for election to our board or for proposing matters that can be acted upon by stockholders at annual stockholder meetings.

In addition, our restated certificate of incorporation, to the fullest extent permitted by law, will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for: any derivative action or proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the Delaware General Corporation Law, or the DGCL, our restated certificate of incorporation, or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, or other employees, which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provisions contained in our restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, results of operations and financial condition.

In addition, Section 203 of the DGCL may discourage, delay or prevent a change in control of our company. Section 203 imposes certain restrictions on mergers, business combinations and other transactions between us and holders of 15% or more of our common stock.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an emerging growth company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of the Nasdaq Global Market, or Nasdaq, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, we expect these rules and regulations to substantially increase our legal and financial compliance costs and to make some activities more time consuming and costly. For example, we expect that these rules and regulations may make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain sufficient coverage. We cannot predict or estimate the amount or timing of additional costs we may incur to respond to these requirements. The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers. Moreover, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

If we fail to maintain proper and effective internal control over financial reporting in the future, our ability to produce accurate and timely financial statements could be impaired, which could harm our operating results, investors' views of us and, as a result, the value of our common stock.

We are not currently required to comply with the Securities and Exchange Commission's, or SEC's, rules that implement Section 404 of the Sarbanes-Oxley Act, and are therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. Pursuant to Section 404, we will be required to furnish a report by our management on our internal control over financial reporting. However, while we remain an emerging growth company, we will not be required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to continue to dedicate internal resources, potentially engage outside consultants and adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that we will not be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our consolidated financial statements. In addition, if we are not able to continue to meet these requirements, we may not be able to remain listed on Nasdaq.

As we grow, we expect to hire additional personnel and may utilize external temporary resources to implement, document and modify policies and procedures to maintain effective internal controls. However, it is possible that we may identify deficiencies and weaknesses in our internal controls. If material weaknesses or deficiencies in our internal controls exist and go undetected or unremediated, our consolidated financial statements could contain material misstatements that, when discovered in the future, could cause us to fail to meet our future reporting obligations and cause the price of our common stock to decline.

Because we do not anticipate paying any cash dividends on our capital stock in the foreseeable future, capital appreciation, if any, will be your sole source of gain.

We have never declared or paid cash dividends on our capital stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We may be subject to securities litigation, which is expensive and could divert management attention.

The market price of our common stock may be volatile and, in the past, companies that have experienced volatility in the market price of their stock have been subject to securities class action litigation. We may be the target of this type of litigation in the future. Securities litigation against us could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business.

Special note regarding forward-looking statements

This prospectus, including the sections entitled “Prospectus summary,” “Risk factors,” “Use of proceeds,” “Management’s discussion and analysis of financial condition and results of operations,” and “Business” contains forward-looking statements. The words “believe,” “may,” “will,” “potentially,” “estimate,” “continue,” “anticipate,” “intend,” “could,” “would,” “project,” “plan,” “expect” and similar expressions that convey uncertainty of future events or outcomes are intended to identify forward-looking statements. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk factors” and elsewhere in this prospectus. Moreover, we operate in a competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. Forward-looking statements include statements about:

- our ability to develop, obtain regulatory approval for and commercialize STK-001 and our future product candidates;
- our success in early preclinical studies or clinical trials, which may not be indicative of results obtained in later studies or trials;
- our ability to obtain regulatory approval to commercialize STK-001 or any other future product candidate;
- our ability to identify patients with the diseases treated by STK-001 or our future product candidates, and to enroll patients in trials;
- the success of our efforts to use TANGO to expand our pipeline of product candidates and develop marketable products;
- our ability to obtain, maintain and protect our intellectual property;
- our reliance upon intellectual property licensed from third parties;
- our ability to identify, recruit and retain key personnel;
- our use of proceeds from this offering;
- our financial performance; and
- developments or projections relating to our competitors or our industry.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to actual results or to changes in our expectations, except as required by law.

You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

Use of proceeds

We estimate that the net proceeds from our sale of shares of common stock in this offering at an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses, will be approximately $ million. If the underwriters exercise their option to purchase additional shares in full, then the net proceeds will be approximately $ million.

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) the net proceeds to us from this offering by $ million, assuming the number of shares offered, as set forth on the cover of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered would increase (decrease) the net proceeds that we receive from this offering by $ million, assuming that the assumed initial public offering price remains the same and after deducting the estimated underwriting discounts and commissions.

We currently intend to use the net proceeds we receive from this offering as follows:

- approximately $ million to $ million to advance our lead product candidate, STK-001, through initiation of a Phase 3 clinical trial;
- approximately $ million to $ million to nominate and demonstrate clinical proof of concept for additional product candidates; and
- any remaining amounts to fund working capital and general corporate purposes.

Based on our planned use of the net proceeds, we estimate such funds, together with our existing cash, cash equivalents and restricted cash, will be sufficient for us to fund our operating expenses and capital expenditure requirements through the end of 2022.

The expected use of the net proceeds from the offering represents our intentions based upon our current plans and business conditions. The amounts we actually expend in these areas, and the timing thereof, may vary significantly from our current intentions and will depend on a number of factors, including the success of research and product development efforts, cash generated from future operations and actual expenses to operate our business. We may use a portion of the net proceeds for the acquisition of, or investment in, businesses that complement our business, although we have no present commitments or agreements.

The amounts and timing of our clinical expenditures and the extent of clinical development may vary significantly depending on numerous factors, including the status, results and timing of our current preclinical studies and those clinical trials which we may commence in the future, the product approval process with the FDA and other regulatory agencies, our current collaborations and any new collaborations we may enter into with third parties and any unforeseen cash needs. As a result, we cannot predict with any certainty all of the particular uses for the net proceeds or the amounts that we will actually spend on the uses set forth above. Accordingly, our management will have broad discretion in the application of the net proceeds, and investors will be relying on the judgment of our management regarding the application of the net proceeds of this offering.

The expected net proceeds of this offering will not be sufficient for us to fund any of our product candidates through regulatory approval, and we will need to raise substantial additional capital to complete the development and commercialization of our product candidates.

Pending the uses described above, we intend to invest the net proceeds from this offering in short term, investment-grade interest-bearing securities such as money market accounts, certificates of deposit, commercial paper and guaranteed obligations of the U.S. government.

Dividend policy

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any cash dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

Capitalization

The following table sets forth our cash, cash equivalents and restricted cash and capitalization as of December 31, 2018 on:

- an actual basis;
- a pro forma basis, giving effect to (i) the automatic conversion of 225,584,874 outstanding shares of our convertible preferred stock as of December 31, 2018 into an aggregate of 225,584,874 shares of common stock immediately prior to the completion of this offering and (ii) the effectiveness of our restated certificate of incorporation in connection with the completion of this offering; and
- a pro forma as adjusted basis, giving effect to (i) the pro forma adjustments described above and (ii) the sale of shares of common stock in this offering, based upon an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses.

The pro forma as adjusted information set forth in the table below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering as determined at pricing.

You should read this table together with “Management’s discussion and analysis of financial condition and results of operations,” “Selected consolidated financial data” and our audited consolidated financial statements and related notes, each included elsewhere in this prospectus.

	As of December 31, 2018		
	Actual	Pro forma	Pro forma as adjusted[1]
			(Unaudited) (in thousands, except share and per share amounts)
Cash, cash equivalents and restricted cash	$105,603	$	$
Convertible preferred stock, par value of $0.0001 per share; 225,584,874 shares authorized, 225,584,874 shares issued and outstanding as of December 31, 2018; aggregate liquidation preference of $130,850 at December 31, 2018	23		
Preferred stock, $0.0001 par value: no shares authorized, issued or outstanding, actual; shares authorized, no shares issued or outstanding pro forma and pro forma as adjusted	—		
Common stock, $0.0001 par value: 278,527,249 shares authorized; 7,236,019 shares issued and outstanding, actual; shares authorized, shares issued and outstanding, pro forma shares issued and outstanding, pro forma as adjusted	1		
Additional paid-in-capital	130,754		
Accumulated deficit	(25,710)		
Total stockholders’ equity	105,068		
Total capitalization	$105,068	$	$

(1) Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) each of our pro forma as adjusted cash, cash equivalents and restricted cash, additional paid-in-capital, total stockholders’ equity and total capitalization by approximately $ million, assuming that the number of shares offered remains the same and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered would increase (decrease) each of our pro forma as adjusted cash, cash equivalents and restricted cash, additional paid-in-capital, total stockholders’ equity and total capitalization by approximately $ million, assuming the assumed initial public offering price remains the same and after deducting the estimated underwriting discounts and commissions.

The table above excludes the following shares:

- 34,663,530 shares of common stock issuable upon the exercise of options outstanding as of December 31, 2018 under our 2014 Equity Incentive Plan, or the 2014 Plan, with a weighted-average exercise price of $0.12 per share;
- 7,110,806 shares of common stock issuable upon the exercise of options granted after December 31, 2018 under the 2014 Plan, with a weighted-average exercise price of $0.35 per share; and
- shares of common stock reserved for future issuance under our stock-based compensation plans, consisting of (i) 11,042,826 shares of common stock reserved for future issuance under our 2014 Plan as of December 31, 2018 and (ii) shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan, which will become effective on the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part. Upon completion of this offering, any remaining shares available for issuance under our 2014 Plan will be added to the shares reserved under our 2019 Equity Incentive Plan and we will cease granting awards under our 2014 Plan. Our 2019 Equity Incentive Plan also provides for automatic annual increases in the number of shares reserved under the plans each year, as more fully described in “Executive compensation—Equity compensation plans and other benefit plans.”

Dilution

If you invest in our common stock in this offering, your ownership interest will be immediately diluted to the extent of the difference between the amount per share paid by purchasers of shares of common stock in this offering and the pro forma as adjusted net tangible book value per share of common stock immediately after this offering.

Net tangible book value (deficit) per share is determined by dividing our total tangible assets (which excludes deferred offering costs) less our total liabilities and convertible preferred stock by the number of shares of common stock outstanding. Our historical net tangible book value (deficit) as of December 31, 2018 was $(25.3) million, or $(3.49) per share, based on 7,236,019 shares of common stock outstanding as of December 31, 2018. Our pro forma net tangible book value as of December 31, 2018 was approximately $ million, or $ per share of common stock. Our pro forma net tangible book value per share represents the amount of our total tangible assets (which excludes deferred offering costs) reduced by the amount of our total liabilities and divided by the total number of shares of our common stock outstanding as of December 31, 2018, after giving effect to the automatic conversion of 225,584,874 outstanding shares of our convertible preferred stock as of December 31, 2018 into an aggregate of 225,584,874 shares of common stock immediately prior to the completion of this offering.

Net tangible book value dilution per share to new investors in this offering represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the pro forma as adjusted net tangible book value per share of common stock immediately after completion of this offering. After giving effect to (i) the pro forma adjustments set forth above and (ii) our sale in this offering of shares of our common stock at an assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, and after deducting the estimated underwriting discounts and commissions and estimated offering expenses, our pro forma as adjusted net tangible book value as of December 31, 2018 would have been approximately $ million, or $ per share of our common stock. This represents an immediate increase in pro forma net tangible book value of $ per share to our existing stockholders and an immediate dilution of $ per share to investors in this offering, as illustrated in the following table:

Assumed initial public offering price, per share		$
Pro forma net tangible book value per share as of December 31, 2018	$	
Increase in pro forma net tangible book value per share attributable to new investors in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution per share to new investors in this offering		$

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) our pro forma as adjusted net tangible book value by $ million, or $ per share and the dilution in pro forma as adjusted net tangible book value per share to new investors in this offering by $ per share, assuming the number of shares offered, as set forth on the cover of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase of 1,000,000 shares in the number of shares of common stock offered in this offering would increase our pro forma as adjusted net tangible book value by approximately $ million, or approximately $ per share, and would increase dilution per share to new investors in this offering by approximately $ per share and each decrease of 1,000,000 shares in the number of shares of common stock offered in this offering would decrease our pro

forma as adjusted net tangible book value by approximately $ million, or approximately $ per share, and would decrease dilution per share to new investors in this offering by approximately $ per share, assuming the assumed initial public offering price per share remains the same and after deducting the estimated underwriting discounts and commissions. The pro forma as adjusted information is illustrative only, and we will adjust this information based on the actual initial public offering price and other terms of this offering determined at pricing.

If the underwriters exercise their option in full to purchase additional shares, the pro forma as adjusted net tangible book value per share after this offering would be $ per share, the increase in pro forma as adjusted net tangible book value per share to existing stockholders would be $ per share and the dilution to new investors in this offering would be $ per share.

The following table shows, as of December 31, 2018, on a pro forma as adjusted basis described above, the differences between the existing stockholders and the purchasers of shares in this offering with respect to the number of shares purchased from us, the total consideration paid, which includes net proceeds received from the issuance of common and convertible preferred stock, cash received from the exercise of stock options, and the value of any stock issued for services and the average price paid per share (in thousands, except per share amounts and percentages):

	Shares purchased		Total consideration		Average price per share
	Number	Percent	Amount	Percent	
Existing stockholders		%	$	%	$
New public investors					$
Total		100.0%	$	100.0%	

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover of this prospectus, would increase (decrease) total consideration paid by new investors and total consideration paid by all stockholders by approximately $ million, assuming that the number of shares offered, as set forth on the cover of this prospectus, remains the same, and after deducting the estimated underwriting discounts and commissions. Similarly, each increase (decrease) of 1,000,000 shares in the number of shares of common stock offered in this offering would increase (decrease) total consideration paid by new investors and total consideration paid by all stockholders by approximately $ million, assuming the assumed initial public offering price remains the same and after deducting the estimated underwriting discounts and commissions. In addition, to the extent that any outstanding options are exercised, investors in this offering will experience further dilution.

Except as otherwise indicated, the above discussion and tables assume no exercise of the underwriters' option to purchase additional shares. If the underwriters exercise their option to purchase additional shares in full, our existing stockholders would own % and our new investors would own % of the total number of shares of our common stock outstanding upon the completion of this offering.

The number of shares of common stock outstanding as of December 31, 2018 excludes:

- 34,663,530 shares of common stock issuable upon the exercise of options outstanding as of December 31, 2018 under our 2014 Equity Incentive Plan, or the 2014 Plan, with a weighted-average exercise price of $0.12 per share;
- 7,110,806 shares of common stock issuable upon the exercise of options granted after December 31, 2018 under the 2014 Plan, with a weighted-average exercise price of $0.35 per share; and

- shares of common stock reserved for future issuance under our stock-based compensation plans, consisting of (i) 11,042,826 shares of common stock reserved for future issuance under our 2014 Plan as of December 31, 2018 and (ii) shares of common stock reserved for future issuance under our 2019 Equity Incentive Plan, which will become effective on the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part. Upon completion of this offering, any remaining shares available for issuance under our 2014 Plan will be added to the shares reserved under our 2019 Equity Incentive Plan and we will cease granting awards under our 2014 Plan. Our 2019 Equity Incentive Plan also provides for automatic annual increases in the number of shares reserved under the plans each year, as more fully described in "Executive compensation—Equity compensation plans and other benefit plans."

Selected consolidated financial data

The following tables set forth our selected consolidated financial data as of, and for the periods ended on, the dates indicated. The selected consolidated statements of operations data presented below for the years ended December 31, 2018 and 2017 and the selected consolidated balance sheet data as of December 31, 2018 and 2017 are derived from our audited consolidated financial statements included elsewhere in this prospectus. The selected consolidated financial data included in this section are not intended to replace the consolidated financial statements and related notes included elsewhere in this prospectus. You should read the selected consolidated financial data together with the section entitled “Management’s discussion and analysis of financial condition and results of operations” and our consolidated financial statements and related notes included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results to be expected for any other period in the future.

	Year ended December 31,	
	2018	2017
	(In thousands, except share and per share amounts)	
Consolidated statements of operations data:		
Revenue	$ —	$ —
Operating expenses:		
Research and development	8,371	3,598
General and administrative	4,410	1,956
Total operating expenses	12,781	5,554
Loss from operations	(12,781)	(5,554)
Other income (expense):		
Interest income	270	—
Other expense, net	(10)	(4)
Total other income (expense)	260	(4)
Net loss	$ (12,521)	$ (5,558)
Net loss per share attributable to common stockholders, basic and diluted[1]	$ (1.77)	$ (0.83)
Weighted-average common shares outstanding, basic and diluted[1]	7,056,159	6,665,733
Pro forma net loss per share, basic and diluted[1]	$ (0.10)	
Weighted-average shares used in computing pro forma net loss per share, basic and diluted[1]	127,659,034	

(1) See Notes 2 and 11 to our consolidated financial statements included elsewhere in this prospectus for a description of how we compute basic and diluted net loss per share and basic and diluted pro forma net loss per share, and the weighted-average number of shares used in the computation of these per share amounts.

	As of December 31,	
	2018	2017
	(In thousands)	
Consolidated balance sheet data:		
Cash, cash equivalents and restricted cash	$105,603	$ 1,797
Total assets	107,539	2,439
Working capital[1]	103,676	(1,805)
Total liabilities	2,471	3,731
Accumulated deficit	(25,710)	(13,189)
Total stockholders' equity (deficit)	105,068	(1,292)

(1) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

Management's discussion and analysis of financial condition and results of operations

You should read the following discussion and analysis of our financial condition and consolidated results of operations together with the section entitled "Selected financial data" and our consolidated financial statements and related notes appearing elsewhere in this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. You should carefully read the section entitled "Risk factors" to gain an understanding of the important factors that could cause actual results to differ materially from our forward-looking statements.

Overview

We are pioneering a new way to treat the underlying causes of severe genetic diseases by precisely upregulating protein expression. We are developing novel antisense oligonucleotide, or ASO, medicines that target ribonucleic acid, or RNA, and modulate precursor-messenger RNA, or pre-mRNA, splicing to upregulate protein expression where needed and with appropriate specificity to near normal levels. We utilize our proprietary technology platform, Targeted Augmentation of Nuclear Gene Output, or TANGO, to design ASOs to upregulate the expression of protein by individual genes in a patient. Our approach is designed to allow us to deliver in a highly precise, durable and controlled manner disease-modifying therapies to a wide range of relevant tissues, including the central nervous system, or CNS, eye, kidney and liver. We designed our lead product candidate, STK-001, to treat Dravet syndrome, a severe and progressive genetic epilepsy. With a well-defined patient population based on routine genetic testing and learnings from recently approved drugs for the treatment of Dravet syndrome to inform the clinical and regulatory pathways, we anticipate an efficient clinical program for STK-001. We plan to submit an investigational new drug application for STK-001 by early 2020 and expect to initiate a Phase 1/2 clinical trial in the first half of 2020. We intend to nominate a second candidate to treat an additional genetic disease for preclinical development by the first half of 2020.

We were incorporated in June 2014. In July 2015 and April 2016, we entered into worldwide license agreements with Cold Spring Harbor Laboratory, or CSHL, and the University of Southampton, respectively, with respect to certain licensed patents and applications relating to TANGO. TANGO exploits non-productive splicing events to effect targeted enhancement of protein expression. Since our inception through December 31, 2018, our operations have been financed by net proceeds of $130.8 million primarily from the sale of convertible notes payable and our convertible preferred stock. As of December 31, 2018, we had $105.6 million in cash, cash equivalents and restricted cash.

Since inception, we have had operating losses, the majority of which are attributable to research and development activities. Our net losses were $12.5 million and $5.6 million for the years ended December 31, 2018 and 2017, respectively, and as of December 31, 2018, we had an accumulated deficit of $25.7 million. Our primary use of cash is to fund operating expenses, which consist primarily of research and development expenditures, and to a lesser extent, general and administrative expenditures. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable and accrued expenses. We expect to continue to incur net losses for the foreseeable future, and we expect our research and development expenses, general and administrative expenses, and capital expenditures will continue to increase. In particular, we expect our expenses and losses to increase as we continue our development of, and seek regulatory approvals for, our product candidates, and begin to commercialize any approved products, as well as hire additional personnel, develop commercial infrastructure, pay fees to outside consultants, lawyers and accountants, and incur increased costs associated with being a public company such as expenses related to services associated with maintaining compliance with

Nasdaq listing rules and SEC requirements, insurance and investor relations costs. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our clinical trials and our expenditures on other research and development activities.

Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash, cash equivalents and restricted cash as of December 31, 2018, will enable us to fund our operating expenses and capital expenditure requirements through the end of 2022. To date, we have not had any products approved for sale and have not generated any product sales. We do not expect to generate any revenues from product sales unless and until we successfully complete development and obtain regulatory approval for one or more of our product candidates, which we expect will take a number of years. If we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing and distribution. As a result, until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through equity offerings, debt financings or other capital sources, including potentially collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Any failure to raise capital as and when needed could have a negative impact on our financial condition and on our ability to pursue our business plans and strategies. If we are unable to raise capital, we will need to delay, reduce or terminate planned activities to reduce costs.

License agreements

Cold Spring Harbor Laboratory

In July 2015, we entered into a worldwide license agreement with CSHL, or the CSHL Agreement, with respect to the TANGO patents. Under the CSHL Agreement, we receive an exclusive (except with respect to certain government rights and non-exclusive licenses), worldwide license under certain patents and applications relating to TANGO. As part of the CSHL Agreement, we granted CSHL 1,640,608 shares of common stock. The CSHL Agreement obligates us to make additional payments that are contingent upon certain milestones being achieved as well as royalties on future product sales. These royalty obligations last on a product-by-product and country-by-country basis until the latest of (i) the expiration of the last valid claim of a patent covering a subject product or (ii) the expiration of any regulatory exclusivity for the subject product in a country. In addition, if we sublicense rights under the CSHL Agreement, we are required to pay a percentage of the sublicense revenue to CSHL, which may be reduced upon achievement of certain milestones for the applicable subject product. The maximum aggregate potential milestone payments payable total approximately $900,000. Additionally, certain licenses under the CSHL Agreement require us to reimburse CSHL for certain past and ongoing patent related expenses, however there were no expenses related to these reimbursable patent costs during the years ended December 31, 2018 and 2017. For more information, please see “Business—License agreements.”

University of Southampton

In April 2016, we entered into an exclusive, worldwide license agreement with the University of Southampton, or the Southampton Agreement, whereby we acquired rights to foundational technologies related to our TANGO technology. Under the Southampton Agreement, we receive an exclusive, worldwide license under certain licensed patents and applications relating to TANGO. As part of the Southampton Agreement, we paid 55,000 pounds sterling (approximately $72,000 as of the date thereof) as an up-front license fee. Under the Southampton Agreement, we may be obligated to make additional payments that are contingent upon certain milestones being achieved, as well as royalties on future product sales. These royalty obligations survive until the latest of (i) the expiration of the last valid claim of a licensed patent covering a subject product or (ii) the expiration of any regulatory

exclusivity for the subject product in a country. In addition, if we sublicense our rights under the Southampton Agreement, we are required to pay a percentage of the sublicense revenue to the University of Southampton. The maximum aggregate potential milestone payments payable by us total approximately 400,000 pounds sterling (approximately $508,000 as of December 31, 2018). As of December 31, 2018, and 2017, we have recorded no liabilities under the Southampton Agreement. For more information, please see “Business—License agreements.”

Financial operations overview

Revenue

We currently do not have any products approved for sale and have not generated any revenue since inception. If we are able to successfully develop, receive regulatory approval for and commercialize any of our current or future product candidates alone or in collaboration with third parties, we may generate revenue from the sales of these product candidates.

Operating expenses

Research and development

Research and development expenses consist primarily of costs incurred for the development of our discovery work and preclinical programs, which include:

- personnel costs, which include salaries, benefits and stock-based compensation expense;
- expenses incurred under agreements with consultants, third-party contract organizations that conduct research and development activities on our behalf, costs related to production of preclinical material and laboratory and vendor expenses related to the execution of preclinical studies;
- scientific consulting, collaboration and licensing fees;
- laboratory equipment and supplies; and
- facilities costs, depreciation and other expenses related to internal research and development activities.

We use our personnel and infrastructure resources across multiple research and development programs directed toward identifying and developing product candidates. Our direct research and development expenses are tracked on a program-by-program basis from the point a program becomes a clinical candidate for us and consist primarily of external costs, such as fees paid to consultants, central laboratories and contractors in connection with our preclinical activities. We do not allocate employee costs, costs associated with our technology or facility expenses, including depreciation or other indirect costs, to specific programs because these costs are currently deployed across multiple product development programs and, as such, are not separately classified. We use internal resources to manage our development activities and our employees work across multiple development programs and, therefore, we do not track their costs by program.

The table below summarizes our research and development expenses incurred by development program:

	Year ended December 31,	
	2018	2017
	(in thousands)	
STK-001	$1,960	$ —
Non-program specific and unallocated research and development expenses	6,411	3,598
Total research and development expenses	$8,371	$3,598

We expense all research and development costs in the periods in which they are incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and third-party service providers.

We expect that our expenses will increase substantially in connection with our planned discovery work, preclinical and clinical development activities in the near term and our planned clinical trials in the future. At this time, we cannot reasonably estimate the costs for completing the preclinical and clinical development of any of our other product candidates. We expect our research and development expenses to increase substantially for the foreseeable future as we continue to invest in research and development activities related to developing our product candidates, including investments in manufacturing, as our programs advance into later stages of development and we conduct clinical trials. The process of conducting the necessary clinical research to obtain regulatory approval is costly and time-consuming, and the successful development of our product candidates is highly uncertain. As a result, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of any of our product candidates.

Because of the numerous risks and uncertainties associated with product development, we cannot determine with certainty the duration and completion costs of the current or future preclinical studies and clinical trials or if, when, or to what extent we will generate revenues from the commercialization and sale of our product candidates. We may never succeed in achieving regulatory approval for our product candidates. The duration, costs and timing of preclinical studies and clinical trials and development of our product candidates will depend on a variety of factors, including:

- successful completion of preclinical studies and investigational new drug-enabling studies;
- successful enrollment in, and completion of, clinical trials;
- receipt of regulatory approvals from applicable regulatory authorities;
- furthering our commercial manufacturing capabilities and arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and non-patent exclusivity;
- launching commercial sales of our product candidates, if and when approved, whether alone or in collaboration with others;
- acceptance of our product candidates, if and when approved, by patients, the medical community and third-party payors;
- effectively competing with other therapies and treatment options;
- a continued acceptable safety profile following approval;
- enforcing and defending intellectual property and proprietary rights and claims; and
- achieving desirable medicinal properties for the intended indications.

A change in the outcome of any of these factors could mean a significant change in the costs and timing associated with the development of our current and future preclinical and clinical product candidates. For example, if the FDA, or another regulatory authority were to require us to conduct clinical trials beyond those that we currently anticipate will be required for the completion of clinical development, or if we experience significant delays in execution of or enrollment in any of our preclinical studies or clinical trials, we could be required to expend significant additional financial resources and time on the completion of preclinical and clinical development. We expect our research and development expenses to increase for the foreseeable future as we continue the development of product candidates.

General and administrative expenses

General and administrative expenses consist primarily of personnel costs, costs related to maintenance and filing of intellectual property, expenses for outside professional services, including legal, human resources, information technology, audit and accounting services, and facilities and other expenses. Personnel costs consist of salaries, benefits and stock-based compensation expense. We expect our general and administrative expenses to increase over the next several years to support our continued research and development activities, manufacturing activities, increased costs of operating as a public company and the potential commercialization of our product candidates. These increases are anticipated to include increased costs related to the hiring of additional personnel, developing commercial infrastructure, fees to outside consultants, lawyers and accountants, and increased costs associated with being a public company such as expenses related to services associated with maintaining compliance with Nasdaq listing rules and SEC requirements, insurance and investor relations costs.

Other income (expense)

Our other income (expense), includes (i) interest income earned on cash reserves in our operating money-market fund investment accounts and (ii) other items of income (expense), net.

Results of operations for the years ended December 31, 2018 and 2017

The following table sets forth our results of operations:

	Year ended December 31,	
	2018	2017
	(in thousands)	
Consolidated statements of operations:		
Revenue	$ —	$ —
Operating expenses:		
Research and development	8,371	3,598
General and administrative	4,410	1,956
Total operating expenses	12,781	5,554
Loss from operations	(12,781)	(5,554)
Other income (expense):		
Interest income	270	—
Other expense, net	(10)	(4)
Total other income (expense)	260	(4)
Net loss	$(12,521)	$(5,558)

Research and development expenses

Research and development expenses were $8.4 million for the year ended December 31, 2018 as compared to $3.6 million for the year ended December 31, 2017, an increase of $4.8 million. The table below summarizes our research and development expenses:

	Year Ended December 31,	
	2018	**2017**
STK-001	$1,960	$ —
Personnel-related expenses	3,825	1,823
Third-party services	1,680	1,199
Scientific consulting	161	160
Facilities and other research and development expenses	745	416
Total research and development expenses	$8,371	$3,598

The increases in research and development expenses were primarily attributable to an increase of $2.0 million on our STK-001 program, comprised of third-party services and scientific consulting fees, an increase of $2.0 million in personnel costs resulting from an increase in headcount, an increase of $0.5 million in third-party services, materials and other costs as we advance our discovery and preclinical activities, and an increase of $0.3 million in facilities and other costs resulting from the growth in our research and development personnel.

General and administrative expenses

General and administrative expenses were $4.4 million for the year ended December 31, 2018 as compared to $2.0 million for the year ended December 31, 2017, an increase of $2.4 million.

The increases in general and administrative expenses were primarily attributable to an increase of $0.8 million in personnel costs resulting from an increase in headcount, an increase of $0.5 million in third-party services to support our in-house personnel in various aspects of developing and supporting the business including human resources, information technology, audit, tax, public relations, communications and other general and administrative activities, an increase of $0.7 million related to cost of maintaining and filing of our intellectual property and an increase of $0.4 million in facilities and other costs resulting from the growth in our general and administrative personnel.

Other income (expense)

The change in our other income (expense) the year ended December 31, 2018 as compared to the year ended December 31, 2017 principally reflects returns on higher levels of cash reserves.

Liquidity and capital resources

Since our inception through December 31, 2018, our operations have been financed by net proceeds of $130.8 million primarily from the sale of convertible notes and our convertible preferred stock. As of December 31, 2018, we had $105.6 million in cash, cash equivalents and restricted cash. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation.

We have incurred losses since our inception in June 2014 and, as of December 31, 2018, we had an accumulated deficit of $25.7 million. Our primary use of cash is to fund operating expenses, which consist primarily of research and development expenditures, and to a lesser extent, general and administrative expenditures. Cash

used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable and accrued expenses.

Our product candidates may never achieve commercialization and we anticipate that we will continue to incur losses for the foreseeable future. We expect that our research and development expenses, general and administrative expenses, and capital expenditures will continue to increase. As a result, until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity offerings, debt financings or other capital sources, including potentially collaborations, licenses and other similar arrangements. Our primary uses of capital are, and we expect will continue to be, compensation and related expenses, third-party clinical research and development services, costs relating to the build-out of our headquarters and manufacturing facility, license payments or milestone obligations that may arise, laboratory and related supplies, clinical costs, manufacturing costs, legal and other regulatory expenses and general overhead costs.

Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash, cash equivalents and restricted cash as of December 31, 2018 will enable us to fund our operating expenses and capital expenditure requirements through at least the end of 2022. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. We will continue to require additional financing to advance our current product candidates through clinical development, to develop, acquire or in-license other potential product candidates and to fund operations for the foreseeable future. We will continue to seek funds through equity offerings, debt financings or other capital sources, including potentially collaborations, licenses and other similar arrangements. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. If we do raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders, including investors in this offering, will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Any failure to raise capital as and when needed could have a negative impact on our financial condition and on our ability to pursue our business plans and strategies. If we are unable to raise capital, we will need to delay, reduce or terminate planned activities to reduce costs.

Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical products, we are unable to estimate the exact amount of our operating capital requirements. Our future funding requirements will depend on many factors, including, but not limited to:

- the scope, progress, results and costs of researching and developing our lead product candidates or any future product candidates, and conducting nonclinical studies and clinical trials;
- the timing of, and the costs involved in, obtaining regulatory approvals or clearances for our lead product candidates or any future product candidates;
- the number and characteristics of any additional product candidates we develop or acquire;
- the timing of any cash milestone payments if we successfully achieve certain predetermined milestones;
- the cost of manufacturing our lead product candidates or any future product candidates and any products we successfully commercialize, including costs associated with building-out our manufacturing capabilities;
- our ability to establish and maintain strategic collaborations, licensing or other arrangements and the financial terms of any such agreements that we may enter into;

- the expenses needed to attract and retain skilled personnel;
- the costs associated with being a public company; and
- the timing, receipt and amount of sales of any future approved or cleared products, if any.

Further, our operating plans may change, and we may need additional funds to meet operational needs and capital requirements for clinical trials and other research and development activities. We currently have no credit facility or committed sources of capital. Because of the numerous risks and uncertainties associated with the development and commercialization of our product candidates, we are unable to estimate the amounts of increased capital outlays and operating expenditures associated with our current and anticipated product development programs.

Cash flows

The following table summarizes our cash flows:

	Year ended December 31,	
	2018	**2017**
	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ (10,964)	$(5,384)
Investing activities	(925)	(113)
Financing activities	115,639	5,974
Net increase in cash, cash equivalents and restricted cash	$103,750	$ 477

Operating activities

During the year ended December 31, 2018, cash used in operating activities was $11.0 million and was attributable to a net loss of $12.5 million, partially offset by non-cash charges of $0.5 million for share-based compensation and depreciation, and a net change of $1.0 million in our net operating assets and liabilities.

During the year ended December 31, 2017, cash used in operating activities was $5.4 million and was attributable to a net loss of $5.6 million, partially offset by non-cash charges of $0.1 million and a net change of $0.1 million in our net operating assets and liabilities.

Investing activities

Our investing activities during the years ended December 31, 2018 and 2017 have consisted principally of purchases of property and equipment.

Financing activities

Our financing activities during the year ended December 31, 2018 included closings on our Series A-2 convertible preferred stock financing in January and September 2018 aggregating gross proceeds of $26.0 million, and the sale of Series B convertible preferred stock in October 2018 raising gross proceeds of $90.0 million.

Our financing activities during the year ended December 31, 2017 included a second extension on our Series A convertible preferred stock financing in February 2017 with gross proceeds of $3.0 million and proceeds on a $3.0 million simple agreement for future equity, or SAFE, in October 2017 which was converted in the initial closing of our Series A-2 convertible preferred stock financing in January 2018.

Contractual obligations and commitments

The following table summarizes our contractual obligations as of December 31, 2018 and the effects that such obligations are expected to have on our liquidity and cash flows in future periods:

	Payments Due by Period				
	Total	Less Than 1 Year	1 to 3 Years	4 to 5 Years	More than 5 Years
					(in thousands)
Operating lease obligations	$3,373	$ 1,051	$2,251	$ 71	$ —
Total	$3,373	$ 1,051	$2,251	$ 71	$ —

In August 2018, we entered into an agreement to sublease approximately 23,000 square feet of space for a term of three years. Lease terms are triple net lease commencing at $0.9 million per year, then with 3% annual base rent increases plus operating expenses, real estate taxes, utilities and janitorial fees. The lease commencement date was December 10, 2018.

In December 2018, we entered into an agreement to lease 2,485 square feet of space for a term of three years. The lease includes one renewal option for an additional two years. Lease terms commence at $0.2 million per year, with 2.5% annual base rent increases plus operating expenses, real estate taxes, utilities and janitorial fees. We expect to occupy this space in the first half of 2019.

Commitments

Our commitments primarily consist of obligations under our agreements with CSHL and the University of Southampton. As of December 31, 2018, we were unable to estimate the timing or likelihood of achieving the milestones or making future product sales. For additional information regarding our agreements, see “Business—License agreements.”

Additionally, we have entered into agreements with third-party contract manufacturers for the manufacture and processing of certain of our product candidates for preclinical testing purposes, and we have entered and will enter into other contracts in the normal course of business with contract research organizations for clinical trials and other vendors for other services and products for operating purposes. These agreements generally provide for termination or cancellation, other than for costs already incurred.

Off-balance sheet arrangements

During the periods presented, we did not have, nor do we currently have, any off-balance sheet arrangements as defined under SEC rules.

Critical accounting policies and significant judgments and estimates

Our management’s discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles, or GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported expenses incurred during the reporting periods. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management’s judgments and estimates.

Stock-based compensation

We recognize compensation costs related to share-based awards granted to employees and directors, including stock options and vesting restricted stock, based on the estimated fair value of the awards on the date of grant. We estimate the grant date fair value, and the resulting stock-based compensation, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

The Black-Scholes option-pricing model requires the use of subjective assumptions to determine the fair value of stock-based awards. These assumptions include:

- *Fair value of common stock*—Historically, for all periods prior to this initial public offering, the fair value of the shares of common stock underlying our share-based awards was estimated on each grant date by our board of directors. To determine the fair value of our common stock underlying option grants, our board of directors considered, among other things, valuations of our common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*, or the *Practice Aid*.
- *Expected term*—The expected term represents the period that stock-based awards are expected to be outstanding. The expected term for option grants is determined using the simplified method. The simplified method deems the expected term to be the midpoint between the vesting date and the contractual life of the stock-based awards.
- *Expected volatility*—Since we have been a privately held company and do not have any trading history for our common stock, the expected volatility is estimated based on the average volatility for comparable publicly traded biotechnology companies over a period equal to the expected term of the stock option grants. The comparable companies were chosen based on their similar size, stage in the life cycle or area of specialty. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available.
- *Risk-free interest rate*—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.
- *Expected dividend*—We have never paid dividends on our common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

The following table presents the weighted-average assumptions used to estimate the fair value of share-based awards granted:

	Year ended December 31,	
	2018	**2017**
Risk-free interest rate	2.67-2.84%	2.27%
Expected dividend yield	0%	0%
Expected life	6.25-6.375 years	6.25-6.375 years
Expected volatility	57-60%	65%

We will continue to use judgment in evaluating the assumptions utilized for our share-based compensation expense calculations on a prospective basis. In addition to the assumptions used in the Black-Scholes option-pricing model, the amount of stock-based compensation expense we recognize in our consolidated financial statements includes actual stock option forfeitures.

Determination of the fair value of common stock

Historically, for all periods prior to this offering, the fair values of the shares of common stock underlying our share-based awards were estimated on each grant date by our board of directors. In order to determine the fair value of our common stock our board of directors considered, among other things, contemporaneous valuations of our common stock prepared by an independent third-party valuation specialist in accordance with the guidance provide by the Practice Aid.

Given the absence of a public trading market for our common stock, our board of directors exercised their judgment and considered a number of objective and subjective factors to determine the best estimate of the fair value of our common stock, including contemporaneous valuations performed by an independent third party, our stage of development, important developments in our operations, the prices at which we sold shares of our preferred stock, the rights, preferences and privileges of our preferred stock relative to those of our common stock, actual operating results and financial performance, the conditions in the biotechnology industry and the economy in general, the stock price performance and volatility of comparable public companies, and the lack of liquidity of our common stock, among other factors. After the closing of this offering, our board of directors will determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on the date of the grant. Our board of directors intended all options granted to be exercisable at a price per share not less than the per share fair value of our common stock underlying those options on the grant date.

We performed common stock valuations, with the assistance of an independent third-party valuation specialist, as of August 2016, January 2018, October 2018 and February 2019 which resulted in a valuation of our common stock of $0.04, $0.06, $0.22 and $0.45, respectively. In conducting the valuations, the independent third-party valuation specialist considered all objective and subjective factors that it believed to be relevant for each valuation conducted in accordance with the Practice Aid, including our best estimate of our business condition, prospects and operating performance at each valuation date. Other significant factors included:

- the prices of our preferred stock sold to outside investors in arm’s length transactions, and the rights, preferences and privileges of our preferred stock as compared to those of our common stock, including the liquidation preferences of our preferred stock;
- our stage of development and business strategy and the material risks related to our business and industry;
- the valuation of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of guideline companies;
- our results of operations and financial position;
- the composition of, and changes to, our management team and board of directors;
- the lack of liquidity of our common stock;
- any external market conditions affecting the life sciences and biotechnology industry sectors;
- the likelihood of achieving a liquidity event for the holders of our common stock and stock options, such as an initial public offering, or IPO, or a sale of our company, given prevailing market conditions; and
- the state of the IPO market for similarly situated privately held life sciences companies.

For the August 2016 valuation, we employed an option pricing method, or OPM, framework and utilized a guideline transactions market approach for inferring the equity value implied by a selection of guideline transactions. This method was selected as there was no recent arm’s-length financing transaction and, as of the

valuation date, we were at an early stage of development and future liquidity events were difficult to forecast. Application of OPM involves making assumptions for the expected time to liquidity, volatility and risk-free rate and then solving for the value of equity such that value for the most recent financing equals the amount paid. For the August 2016 valuation we assumed a weighted average cost of capital of 40% and a 3.25-year term to a liquidity event to estimate total equity value and, for purposes of the OPM allocation of total equity value, a 65% volatility rate and a 1.38-year estimated term. We then reflected a probability weighted average discount for lack of marketability of 35% to arrive at a $0.04 per share valuation of our common stock.

For the January 2018 valuation, we employed an OPM framework and utilized the back-solve method for inferring and allocating the equity value predicated on the capital raise that transpired just prior to the valuation date. This method was selected as management concluded that the recent financing transaction was an arm's-length transaction. Furthermore, as of the valuation date we were at an early stage of development and future liquidity events were difficult to forecast. Application of the OPM back-solve method involves making assumptions for the expected time to liquidity, volatility and risk-free rate and then solving for the value of equity such that value for the most recent financing equals the amount paid. For the January 2018 valuation and for purposes of the OPM allocation of total equity value determined with reference to a recent financing transaction, we assumed a 57% volatility rate and a 1.5-year estimated term. We then reflected a probability weighted average discount for lack of marketability of 35% to arrive at a $0.06 per share valuation of our common stock.

For the October 2018 valuation, the independent third-party valuation specialist used a hybrid method of two potential liquidity outcomes: a trade-sale scenario predicated on the arm's length capital raise that transpired just prior to the valuation date and an IPO scenario with reference to recent IPO transactions in the biotechnology and pharmaceutical industry and considering our preclinical stage of development. Under the hybrid method, the per share value calculated under the two scenarios are weighted based on expected exit outcomes and the quality of the information specific to each allocation methodology to arrive at a final estimated fair value per share value of the common stock before a discount for lack of marketability is applied. For the October 2018 valuation we (i) assigned a 90% probability of occurrence to the trade-sale scenario, with a 73% volatility rate and a 1.13-year estimated term applied within the OPM, then reflected a probability weighted average discount for lack of marketability of 35%; and (ii) we assigned a 10% probability of occurrence to the IPO scenario, with a 30% weighted average cost of capital and a 0.88-year estimated term to an IPO event, then reflected a probability weighted average discount for lack of marketability of 18%.

For the February 2019 valuation, the independent third-party valuation specialist used a hybrid method of two potential liquidity outcomes: a trade-sale scenario predicated on the arm's length capital raise that transpired prior to the valuation date and an IPO scenario with reference to recent IPO transactions in the biotechnology and pharmaceutical industry and considering our preclinical stage of development. Under the hybrid method, the per share values calculated under the two scenarios are weighted based on expected exit outcomes and the quality of the information specific to each allocation methodology to arrive at a final estimated fair value per share value of the common stock before a discount for lack of marketability is applied. For the February 2019 valuation, we (i) assigned a 65% probability of occurrence to the trade-sale scenario, with a 61% volatility rate and a 1.75-year estimated term applied within the OPM, then reflected a probability weighted average discount for lack of marketability of 30%; and (ii) we assigned a 35% probability of occurrence to the IPO scenario, with a 25% weighted average cost of capital and a 0.38-year estimated term to an IPO event, then reflected a probability weighted average discount for lack of marketability of 12.5%.

The estimates of fair value of our common stock are highly complex and subjective. There are significant judgments and estimates inherent in the determination of the fair value of our common stock. These judgments and estimates include assumptions regarding our future operating performance, the time to completing an IPO or other liquidity event, the related valuations associated with these events, and the determinations of the

appropriate valuation methods at each valuation date. The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. If we had made different assumptions, our stock-based compensation expense, net loss and net loss per share applicable to common stockholders could have been materially different.

For valuations after the completion of this offering, our board of directors will determine the fair value of each share of underlying common stock based on the closing price of our common stock as reported on the date of grant.

Determination of estimated offering price

We and our underwriters determined the estimated price range set forth on the cover of this preliminary prospectus, which is $ to $ per share. In comparison, our estimate of the fair value of our common stock was $ per share at , 2019, which was determined by our board of directors with the assistance of an independent third-party valuation of our common shares.

We note that, as is typical in initial public offerings, the estimated price range for this offering was not derived using a formal determination of fair value but was determined based upon discussions between us and the underwriters. Among the factors considered in setting the estimated range were prevailing market conditions, estimates of our business potential, progress in our clinical trials and developments in our business, the general condition of the securities market and the market prices of, and demand for, publicly-traded common stock of generally comparable companies.

The intrinsic value of all outstanding options as of December 31, 2018 was $ million based on an assumed initial public offering price of $ per share, the midpoint of the price range set forth on the cover of this prospectus.

Emerging growth company and smaller reporting company status

We are an "emerging growth company," as defined in the Jumpstart our Business Startups Act of 2012, or the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies.

We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act.

As a result, our consolidated financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

We will remain an emerging growth company until the earliest of (i) the last day of our first fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which we have total annual gross revenues of at least $1.07 billion, or (c) when we are deemed to be a large accelerated filer, which means the market value of our common stock that is held by non-affiliates exceeds $700 million as of the prior June 30th and (ii) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

We are also a "smaller reporting company," meaning that the market value of our stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to us as a result of this offering is less than $700 million and our annual revenue is less than $100 million during the most recently completed fiscal year. We may

continue to be a smaller reporting company after this offering if either (i) the market value of our stock held by non-affiliates is less than $250 million or (ii) our annual revenue is less than $100 million during the most recently completed fiscal year and the market value of our stock held by non-affiliates is less than $700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Recently adopted accounting pronouncements

In May 2017, the FASB issued ASU 2017-09, *Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting*, which provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. The amendments in this ASU should be applied prospectively to an award modified on or after the adoption date. We adopted ASU 2017-09 effective January 1, 2018, and the adoption of ASU 2017-09 did not impact our consolidated financial statements or financial statement disclosures.

Recently issued accounting pronouncements

In February 2016, the FASB issued ASU 2016-02, *Leases* (Topic 842), with guidance regarding the accounting for and disclosure of leases. The update requires lessees to recognize all leases, including operating leases, with a term greater than 12 months on the balance sheet. This update also requires lessees and lessors to disclose key information about their leasing transactions. This guidance will be effective for public companies for annual and interim periods beginning after December 15, 2018. For all other companies, this standard is effective for annual reporting periods beginning after December 15, 2019, and interim periods within annual periods beginning after December 15, 2020. We will adopt this standard on January 1, 2020. While we expect the implementation of ASU 2016-02 to result in the recognition of right-of-use assets and lease liabilities for leased facilities, we are still evaluating the impact that the adoption of ASU 2016-02 will have on our consolidated financial statements.

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share* (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. *Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception.* Part I of this update addresses the complexity of accounting for certain financial instruments with down round features. Down round features are features of certain equity-linked instruments (or embedded features) that result in the strike price being reduced on the basis of the pricing of future equity offerings. Current accounting guidance creates cost and complexity for entities that issue financial instruments (such as warrants and convertible instruments) with down round features that require fair value measurement of the entire instrument or conversion option. Part II of this update addresses the difficulty of navigating Topic 480, Distinguishing Liabilities from Equity, because of the existence of extensive pending content in the FASB Accounting Standards Codification. This pending content is the result of the indefinite deferral of accounting requirements about mandatorily redeemable financial instruments of certain nonpublic entities and certain mandatorily redeemable noncontrolling interests. The amendments in Part II of this update do not have an accounting effect. For public business entities, the amendments in Part I of ASU 2017-11 are effective for fiscal years and interim periods within those years beginning after December 15, 2018. For all other entities, the amendments in Part I of this update are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. We intend to adopt Part I of this update

on January 1, 2020. Early adoption is permitted for all entities, including adoption in an interim period. We are currently assessing the potential impact of adopting ASU 2017-11 on our consolidated financial statements and financial statement disclosures.

In August 2018, the FASB issued ASU 2018-13, *"Fair Value Measurement (Topic 820), Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement".* This ASU removed the following disclosure requirements: (i) the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy; (ii) the policy for timing of transfers between levels; and (i) the valuation processes for Level 3 fair value measurements. Additionally, this update added the following disclosure requirements: (i) the changes in unrealized gains and losses for the period included in other comprehensive income and loss for recurring Level 3 fair value measurements held at the end of the reporting period; and (ii) the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. For certain unobservable inputs, an entity may disclose other quantitative information (such as the median or arithmetic average) in lieu of the weighted average if the entity determines that other quantitative information would be a more reasonable and rational method to reflect the distribution of unobservable inputs used to develop Level 3 fair value measurements. ASU 2018-13 will be effective for all entities, for fiscal years beginning after December 15, 2019 with early adoption permitted. We intend to adopt this standard on January 1, 2020 and does not expect that the adoption of the update will have a material impact on our consolidated financial statements.

Quantitative and qualitative disclosures about market risk

Interest rate risk

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities. We held cash, cash equivalents and restricted cash of $105.6 million as of December 31, 2018. We generally hold our cash in interest-bearing money market accounts. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. An immediate 100 basis point change in interest rates would affect the fair market value of our cash equivalents by approximately $1.1 million.

Business

Overview

We are pioneering a new way to treat the underlying causes of severe genetic diseases by precisely upregulating protein expression. We are developing novel antisense oligonucleotide, or ASO, medicines that target ribonucleic acid, or RNA, and modulate precursor-messenger RNA, or pre-mRNA, splicing to upregulate protein expression where needed and with appropriate specificity to near normal levels. We utilize our proprietary technology platform, Targeted Augmentation of Nuclear Gene Output, or TANGO, to design ASOs to upregulate the expression of protein by individual genes in a patient. Our approach is designed to allow us to deliver in a highly precise, durable and controlled manner disease-modifying therapies to a wide range of relevant tissues, including the central nervous system, or CNS, eye, kidney and liver. We designed our lead product candidate, STK-001, to treat Dravet syndrome, a severe and progressive genetic epilepsy. With a well-defined patient population based on routine genetic testing and learnings from recently approved drugs for the treatment of Dravet syndrome to inform the clinical and regulatory pathways for STK-001, we anticipate an efficient clinical program for STK-001. We plan to submit an investigational new drug application, or IND, for STK-001 by early 2020 and expect to initiate a Phase 1/2 clinical trial in the first half of 2020. We intend to nominate a second candidate to treat an additional genetic disease for preclinical development by the first half of 2020.

Our proprietary technology platform is based on the pioneering work conducted on pre-mRNA splicing and ASOs in the laboratory of one of our co-founders, Adrian R. Krainer, Ph.D., of Cold Spring Harbor Laboratory in New York. Inspired by the clinical success of SPINRAZA, an ASO medicine for the treatment of spinal muscular atrophy that was co-invented by Professor Krainer, our company was founded to develop a general antisense approach to upregulate protein expression. TANGO exploits unique, patented mechanisms for antisense-mediated modulation of splicing to prevent the synthesis of naturally occurring non-productive messenger RNA, or mRNA, and to increase the synthesis of productive mRNA to increase production of functional protein. Our technology operates in a mutation-independent manner and can thereby provide a single-drug approach for diseases that are caused by many loss-of-function mutations in a single gene. We have identified approximately 2,900 monogenic, or single gene, diseases which we believe are amenable to TANGO. We have an intellectual property estate that includes multi-national allowed and pending claims for the TANGO mechanisms, as well as multi-national pending claims relating to compositions of matter of oligonucleotides designed to target specific TANGO elements in genes for more than 140 genetic diseases that we believe are amenable to upregulation of target protein expression using TANGO.

We are initially focused on applying the transformative potential of our platform to develop precision medicines for autosomal dominant haploinsufficiency diseases. There are more than 660 known monogenic diseases that are categorized as haploinsufficiencies. These diseases are ones in which only one copy, or allele, of the gene needs to be mutated for the disease or trait to develop, and that mutated allele generates a protein that is severely deficient in amount or activity, resulting in approximately 50% of normal protein expression in the patient. We believe TANGO is well-suited to treat haploinsufficiencies by increasing expression of the healthy, or wild-type, allele, thereby restoring the target protein to near normal levels.

We are developing TANGO as potentially the first precision medicine platform for a category of severe genetic diseases known as autosomal dominant haploinsufficiencies. Existing precision medicine platforms, including gene therapy, gene editing, modified mRNA, protein-based drugs, small molecules and oligonucleotides, have fundamental limitations that make them poorly suited to address haploinsufficiencies. Numerous technical challenges preclude effective application of these modalities to haploinsufficiencies, including: (i) the inability to control level and tissue distribution of target protein expression, (ii) potential irreversible on- and off-target effects, (iii) target gene size limitations, (iv) incompatibility with diseases caused by many mutations, (v) drug

manufacturing and (vi) delivery hurdles. There is a need for novel therapeutics that can restore protein expression and address the underlying genetic causes of haploinsufficiencies.

Within haploinsufficiency diseases, we are initially prioritizing the development of ASOs for the treatment of genetic epilepsies. According to a 2010 publication in *Nature Reviews Neurology* and a 2018 publication in *JAMA Neurology*, more than 50% of epilepsies are now recognized as having a genetic basis and more than 30% of patients are refractory to existing therapies, especially those with a genetic epilepsy. Our most advanced program is the potentially first disease-modifying therapy for Dravet syndrome, a severe and progressive genetic epilepsy. Dravet syndrome is caused by loss-of-function mutations in one allele of the *SCN1A* gene and is characterized by frequent and prolonged seizures beginning in the first year of life, severe intellectual and developmental disabilities and other serious health problems, including, notably, sudden premature death in approximately 20% of patients with Dravet syndrome. Current treatments for Dravet syndrome only address the occurrence of seizures, not the underlying cause of disease, and they do so very poorly, with more than 90% of Dravet syndrome patients suffering from inadequate seizure control with existing antiepileptic regimens.

We have generated preclinical data demonstrating proof-of-mechanism for STK-001 and intend to submit an IND application by early 2020. With a well-defined patient population based on routine genetic testing and learnings from recently approved drugs for the treatment of Dravet syndrome to inform the clinical and regulatory pathways for STK-001, we anticipate an efficient clinical program for STK-001. We are leveraging similar ASO chemistry as the approved drug SPINRAZA, which minimizes potential safety and biodistribution risks in the CNS. We expect to initiate a Phase 1/2 clinical trial in children and adolescents with Dravet syndrome in the first half of 2020 and anticipate clinical data, including preliminary efficacy data, in 2021. Beyond STK-001, we are building a pipeline of first-in-class precision medicines for genetic epilepsies and other haploinsufficiencies, and we intend to nominate our second candidate to treat an additional genetic disease for preclinical development by the first half of 2020.

Our executive management team has extensive collective expertise in human genetics and modulation of RNA processes using ASOs, as well as a track record of success in rare disease drug development. Our executive team and co-founders have been previously involved with other companies in the discovery, development and commercialization of many treatments for rare diseases, including Sarepta's Exondys 51 and Biogen's SPINRAZA. Our scientific and clinical advisory boards are comprised of leading experts in the fields of human genetics, pre-mRNA splicing and ASOs, and neurodevelopmental and neurodegenerative diseases. Their involvement in both academic research and clinical practice allows us to gain proprietary and early insight into emerging biology and clinical practice that informs our business strategy. As of December 31, 2018, we have raised over $130 million in funding from two financing rounds, including investments from Apple Tree Partners, RTW Investments, RA Capital Management, Cormorant Asset Management, Perceptive Advisors and funds managed by Janus Henderson Investors, Redmile Group, Sphera Funds Management and Alexandria Venture Investments.

Our strategy

We are using our proprietary TANGO technology platform to create ASOs for the treatment of severe genetic diseases. The critical components of our strategy include:

- *Rapidly advance our lead program, STK-001, to clinical proof-of-concept, approval and commercialization.* We intend to advance our lead product candidate, STK-001, into a Phase 1/2 clinical trial in children and adolescents with Dravet syndrome in the first half of 2020. We are leveraging previously-validated ASO chemistry, a modality that has been successfully utilized for other diseases, a well-defined patient population based on routine genetic testing and learnings from recently approved drugs for the

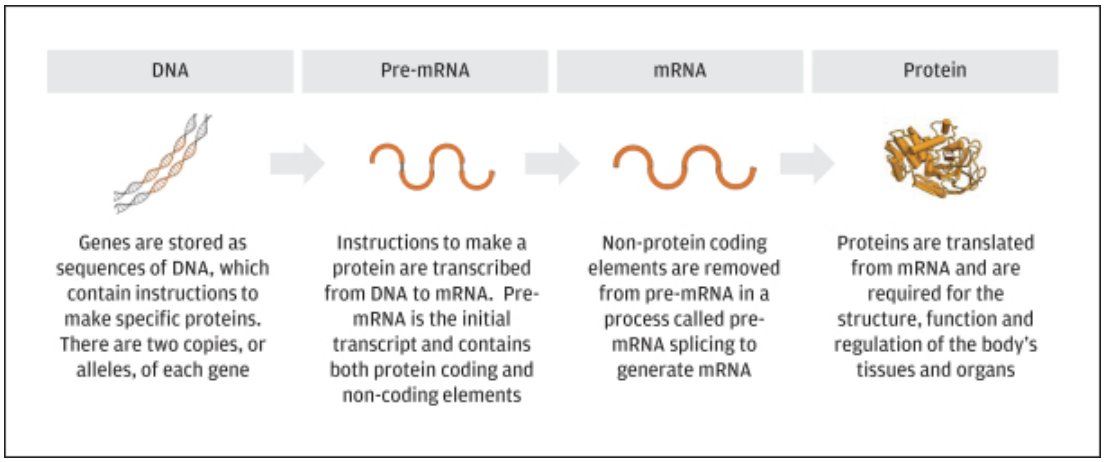
treatment of Dravet syndrome to inform the clinical and regulatory pathways for STK-001 and minimize potential safety concerns and development risk. We believe STK-001 has the potential to result in significantly improved outcomes compared to existing antiepileptic drugs, including reducing both occurrence of seizures and significant non-seizure comorbidities. If we see evidence of efficacy following clinical data, then we would plan to meet with regulatory authorities to discuss expedited regulatory pathways. If approved, we intend to leverage a lean, targeted internal commercial organization to bring STK-001 to patients globally.

- *Prioritize genetic epilepsies for near-term development efforts.* We believe that no other haploinsufficiency disease area holds as much clear need or as much promise for near-term medical breakthrough as genetic epilepsies. Leveraging our proprietary database, we have identified over 100 genes that are commonly mutated amongst epilepsy patients and that may be amenable to TANGO. We believe that the learnings from our lead Dravet syndrome program will significantly reduce the developmental risk of subsequent programs in our pipeline, particularly those targeting the CNS.
- *Expand our pipeline into other disease areas to fully exploit the potential of our proprietary platform.* We have built a target discovery process utilizing proprietary bioinformatics algorithms and extensive in-house expertise in whole transcriptome RNA sequencing to rapidly and systematically identify diseases that we believe can be addressed using our platform. We are advancing several early programs focused on multiple targets, including haploinsufficiency diseases of the CNS, eye, kidney and liver. Indications beyond genetic epilepsies for which our technology may be applicable include autosomal dominant optic atrophy and autosomal dominant polycystic kidney disease. Longer-term, we believe that our ASOs may have the potential to upregulate non-mutated genes in biological pathways to treat diseases or conditions that are caused by multiple genes or are multifactorial, such as autoimmune diseases, aging and cancer.
- *Maintain broad commercial rights to our product candidates.* We own commercial rights to our technologies and clinical programs, including our lead product candidate, STK-001. We intend to build a fully integrated global biotechnology company and independently pursue the development and commercialization of our key product candidates. As we continue to advance our programs, we may pursue strategic collaborations to share risk and upside in disease areas with higher inherent biology risk, larger clinical trial sizes and longer or more complex clinical and regulatory paths. We plan to opportunistically evaluate potential collaboration arrangements and may elect to enter into an arrangement with a pharmaceutical or biotechnology company as early as this year.
- *Continue to strengthen and expand our intellectual property portfolio.* We have an intellectual property estate that includes multi-national allowed and pending claims for the TANGO mechanisms, as well as multi-national pending claims relating to compositions of matter of oligonucleotides designed to target specific TANGO elements in genes for more than 140 genetic diseases that we believe are amenable to upregulation of target protein expression using TANGO. Our proprietary position is reinforced by additional technical know-how and trade secrets. We continually assess and refine our intellectual property strategy as we identify new targets amenable to TANGO, and we will file additional patent applications as appropriate.

Genetic diseases and precision medicines

Each person’s genetic material, or genome, consists of deoxyribonucleic acid, or DNA, in sequences of genetic code called genes. There are two copies, or alleles, of each gene, which act as instructions to produce specific proteins. When a cell needs to produce a protein, the instructions to make that protein are transcribed from DNA to mRNA for each allele. The initial transcript is called pre-mRNA and contains both protein coding and non-coding elements. During transcription, the non-protein coding elements, such as introns or non-coding exons, are removed in a process called pre-mRNA splicing. Splicing serves to stitch together the coding

elements, or exons, to generate mRNA. The mRNA then serves as the instructions to produce protein. Proteins are required for the structure, function, and regulation of the body's tissues and organs. The key steps for protein synthesis are exemplified in the schematic below.



The DNA in the human genome contains approximately three billion nucleotide base pairs, and small changes, or mutations, routinely occur in the base pairs. A mutation in the gene can alter the amount or activity of the protein. Currently, there are estimated to be over 10,000 diseases caused by a genetic abnormality in a single gene. These are also known as monogenic diseases. Monogenic diseases can be categorized as either autosomal recessive or autosomal dominant diseases.

For diseases that are autosomal recessive, both alleles of a gene must be mutated for the disease or trait to develop. The protein that is generated is severely deficient in amount or activity and typically results in less than 10-25% of normal protein expression in the patient. Conversely, autosomal dominant diseases are those in which only one allele of the gene needs to be mutated for the disease or trait to develop. Autosomal dominant diseases can be broken down into two categories: autosomal dominant gain-of-function or dominant negative and autosomal dominant haploinsufficiency, or loss-of-function. In dominant gain-of-function (dominant negative) diseases, the mutant protein possesses a new deleterious or increased function and acts therefore as a toxic protein. In our focus area of haploinsufficiency diseases, the mutated allele generates a protein that is severely deficient in amount or activity and results in approximately 50% of normal protein expression. Haploinsufficiencies include both rare conditions as well as more common disorders. Severe haploinsufficiencies typically arise from spontaneous mutation, and thus the incidence of these diseases is not reduced by pre-conception genetic screening.

Multiple therapeutic modalities, including gene therapy, gene editing, modified mRNA, protein-based drugs, small molecules and oligonucleotides are approved or are being developed to address all types of monogenic diseases. However, most of these therapeutic approaches are focused on autosomal recessive or autosomal dominant gain-of-function (dominant negative) diseases. The nature and fundamental limitations of these modalities make them poorly suited to address the underlying genetic cause of haploinsufficiency diseases. Consequently, there has been little focus on drug development for these diseases despite a significant unmet medical need.

The table below summarizes the major categories of genetic diseases and the various precision medicine approaches that are actively being used or explored to address them.

Category	Autosomal recessive	Autosomal dominant gain-of-function / dominant negative	Autosomal dominant haploinsufficiency
Genetic mutation	Loss-of-function mutations in both gene alleles	Gain-of-function or dominant negative mutation in one gene allele (toxic protein)	Loss-of-function mutation in one gene allele
Result	Less than 10-25% of normal protein expression	Deleterious or increased protein expression	Approximately 50% of normal protein expression
Disease examples	• Phenylketonuria • Lysosomal storage disorders • Beta-thalassemia • Cystic fibrosis	• Huntington's disease • Parkinson's disease • Spinocerebellar ataxia • AD hypocalcemia	• Dravet syndrome • Optic atrophy • Tuberous sclerosis • Polycystic kidney disease
Current and emerging precision medicines	• Gene therapy • Gene editing • Modified mRNA • Protein-based drugs	• Gene therapy • Gene editing • Protein-based drugs • Small molecules • Oligonucleotides	• Our TANGO technology STOKE THERAPEUTICS
Therapeutic goal	Upregulate protein expression to greater than 10-25% of normal	Downregulate protein expression / inhibit protein function	Upregulate protein expression to near normal

Current and emerging precision medicines and their limitations

While current and emerging precision medicine approaches have already made and will likely continue to make significant advancements, we believe they currently possess fundamental limitations which must be overcome before they will become a practical approach to treating genetic diseases, especially autosomal dominant haploinsufficiencies.

Gene therapy

Gene therapy is designed to introduce a functional copy of a defective gene or gene sequence into a patient's cell. This therapeutic approach provides the potential to replace the defective genes that lead to disease.

Today, gene therapy is subject to several technical challenges. Single stranded adeno-associated virus (ssAAV) gene therapy approaches are unable to efficiently package more than 4.7 kilobases of coding DNA and the more efficient self-complementary AAV (scAAV) are limited to 2.1 kilobases of coding DNA; thereby restricting their utility to smaller gene targets. In addition, the inability of current approaches to establish tunable control of the level of protein expression and tissue specificity raises concerns of possible unintended DNA changes and unwanted on- and off-target effects. Further, gene therapy vectors are complex delivery systems, which significantly increase the cost of manufacturing and the difficulty of maintaining reliable quality among product lots.

Gene editing

A more recent approach is gene editing, which is the process of replacing, deleting or repairing defective DNA in its native genomic location. The current focus of gene editing is knocking out a diseased gene or correcting an individual mutation within a gene that is frequent within the disease population. The approach faces many similar challenges to gene therapy and has yet to achieve clinical proof-of-concept.

Gene editing currently suffers from numerous limitations, including the inability to control level and duration of protein expression, a potential for irreversible unintended DNA changes and unwanted on- and off-target effects, and a complex delivery and manufacturing process. In addition, gene editing repairs one mutation at a time, and thus is not well-suited for the treatment of diseases caused by many mutations in a single gene, as is the case for many haploinsufficiencies, which typically result from multiple spontaneous mutations.

Modified mRNA

Over the past several years, there has been significant investment and progress in the field of modified mRNA. These therapies are designed to increase mRNA levels by exogenous delivery of modified mRNA.

However, modified mRNA is characterized by significant drug delivery hurdles and its clinical application has largely been limited to novel vaccines. This therapeutic modality also does not permit precise targeting of tissue and requires complex manufacturing processes that are unproven at commercial scale. In addition, modified mRNA requires frequent administration given its short duration and safe repeat dosing has yet to be achieved clinically. Finally, the ability to package large genes is also unproven and may limit utility to smaller gene targets.

Protein-based drugs

Protein-based drugs are manufactured in living cells and can bind with high specificity to a variety of extracellular or cell surface targets or can be used to replace mutated or missing extracellular proteins. Protein-based drugs can also bind to a very narrow spectrum of intracellular proteins (lysosomal storage proteins). Antibodies (and antibody-like proteins) have become the most common type of biologic because of the specificity and long duration of action of this type of molecule. Monoclonal antibody drugs typically act by inhibiting target proteins through competitive binding (antagonists).

Currently, protein-based drugs are unable to address most diseases caused by deficient activity of intracellular or transmembrane proteins, such as ion channels involved in genetic epilepsies. Additionally, complex manufacturing and short duration after administration can prevent maintaining therapeutic levels of the protein in the body.

Small molecules

Small molecules consist predominantly of hydrophobic organic compounds under 500 daltons in molecular weight and are manufactured through chemical synthesis. These drugs typically act by deactivating or inhibiting target proteins through competitive binding (antagonists). In much rarer instances, small molecule agonists can sometimes be identified that increase the activity of a target protein through binding to a regulatory site.

Small molecules are artificial agonists which act through non-natural mechanisms, and therefore do not fully compensate for the loss of a protein that functions in a regulated fashion or as part of a multi-protein complex. Applications for small molecules are also very limited, and proteins that possess small molecule-binding pockets have been estimated to account for only 2-5% of the human proteome. Small molecules also lack selectivity and specificity, creating the potential for off-target toxicity. Finally, these therapeutics typically do not address the underlying cause of genetic diseases and consequently may have limited impact on patient quality of life or life expectancy.

Oligonucleotides

Oligonucleotides are short strands of modified RNA or DNA, usually 12-30 nucleotides in length, that are manufactured by chemical synthesis. Single-stranded oligonucleotides that bind to mRNA are called ASOs, which have been developed primarily to downregulate protein expression by RNase H-mediated cleavage of target mRNA.

Over the past few years, there has been very limited success in developing clinical ASOs to upregulate protein expression due to a focus on indirect and weakly validated mechanisms of action such as targeting microRNAs or long non-coding RNAs that are associated with a gene transcript. The only exceptions are SPINRAZA, which corrects a unique splicing mutation in *SMN2*, and Exondys-51, which generates an internally-truncated form of dystrophin after removing or 'skipping' out a mutated exon to restore the reading frame. Neither drug represents a generalizable strategy to upregulate the expression of protein. Similarly, double-stranded oligonucleotides have been developed primarily to downregulate protein expression by RNA interference mediated cleavage of target mRNA. To date, there has been very limited success in developing clinical double-stranded oligonucleotides to upregulate protein expression.

Given these fundamental limitations of existing modalities, most genetic diseases, particularly autosomal dominant haploinsufficiencies, are dramatically underserved by current therapeutic options. Within rare diseases, only 5% of conditions have an approved drug treatment, and most approved drugs only manage symptoms with little impact on outcomes and life expectancy. We believe there is a clear need for our novel ASOs, which precisely upregulate target protein expression and have the potential to provide disease-modifying therapies to treat many diseases beyond the reach of current approaches.

Our precision medicine platform

Treatment of autosomal dominant haploinsufficiency diseases with TANGO

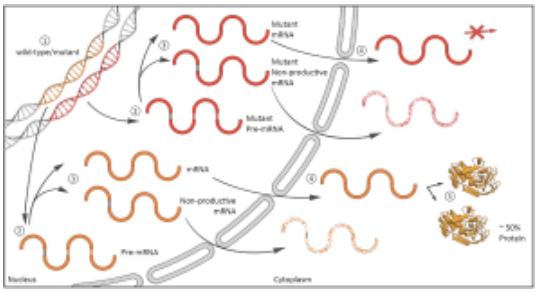
We are developing our proprietary technology platform, TANGO, as potentially the first precision medicine platform for a category of severe genetic diseases known as autosomal dominant haploinsufficiencies. We utilize TANGO to design ASOs to increase the expression of protein by individual genes in a patient. TANGO exploits unique mechanisms for modulation of splicing to prevent the synthesis of naturally occurring non-productive mRNA and increase the synthesis of productive mRNA, resulting in increased production of functional protein.

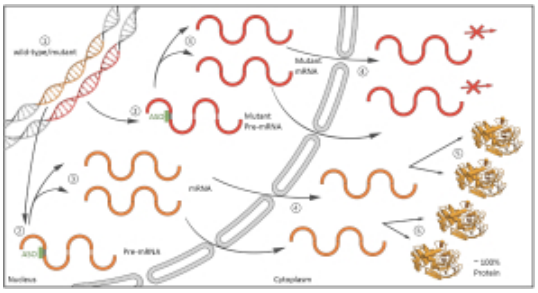
TANGO leverages non-productive mRNA, which is the result of non-productive splicing that leads to either transcript degradation due to non-coding exon inclusion or nuclear retention of transcripts due to intron retention. In some cases, these non-productive splicing events are a part of normal gene regulation, and in all cases the non-productive splicing events are part of the wild-type or normal sequence of the gene. Non-productive mRNA can be produced by both wild-type and mutant alleles and is not translated into protein.

We are initially focused on applying the transformative potential of our platform to developing precision medicines for haploinsufficiencies, or disorders in which only one allele of a gene is mutated, resulting in approximately 50% of normal protein expression. We believe our TANGO technology is well-suited to provide a gene-specific increase in expression of the healthy, or wild-type, allele, thereby restoring the target protein to near normal levels.

The figures below illustrate the TANGO mechanism for increasing protein synthesis in a prospective patient with a haploinsufficiency. To date, we have demonstrated this TANGO mechanism in preclinical models of haploinsufficiencies. The left panel illustrates the prospective patient with a haploinsufficiency possessing one wild-type allele and one mutant allele. The mutant allele is translated into non-functional protein and results in

approximately 50% of normal protein expression. In the right panel, treatment with our ASO would prevent the synthesis of naturally occurring non-productive mRNA and would increase the synthesis of productive mRNA, thereby restoring the target protein to near normal levels. Our preclinical studies show that any increase in mutant mRNA would have no effect on the net protein level.

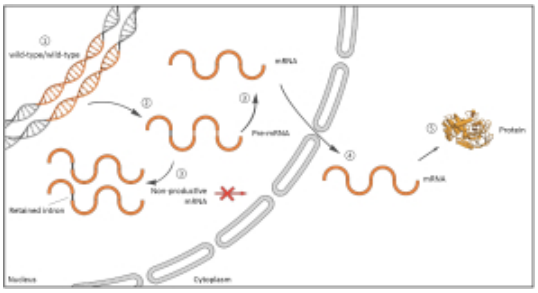


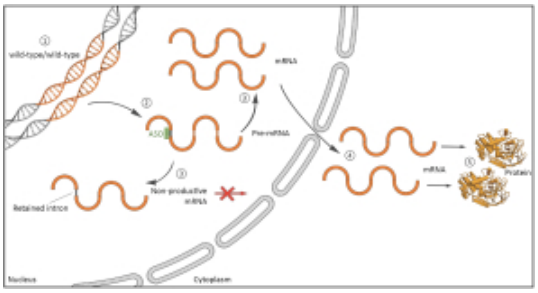


TANGO mechanisms of action

Our ASOs are specifically designed to bind to a desired RNA sequence inside the nuclei of patients' cells to prevent the occurrence of non-productive splicing. By doing so, our ASOs decrease the amount of non-productive mRNA and increase the level of productive mRNA, leading to the generation of more protein. TANGO operates in a mutation-independent manner, given it utilizes one wild-type allele, and does not alter protein coding splicing isoforms. The net effect is increased expression of functional protein from the wild-type allele. The two categories of non-productive splicing events amenable to TANGO are retained introns and nonsense-mediated mRNA decay of the resulting mRNA. While we benefit from leveraging previously-validated ASO chemistries, both of these TANGO mechanisms are novel.

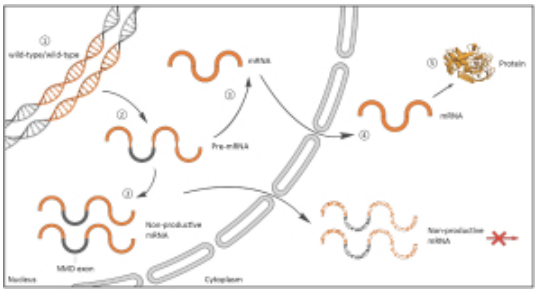
The first category of non-productive splicing events amenable to TANGO is retained introns. Retained introns are found in approximately 60% of gene transcripts and are part of the wild-type sequence of the gene. In some cases, retained introns are part of normal gene regulation. The non-productive mRNA, which contains these retained introns, remain in the nucleus of the cell and are not translated into protein, and offer a reservoir of non-productive mRNA that can be converted into productive mRNA. Our ASOs bind to the pre-mRNA and redirect the splicing machinery to remove the retained intron. This splice-switching decreases non-productive mRNA and increases productive mRNA, which is translated into increased protein expression from the wild-type allele. This is shown in the figures below, with the left panel illustrating non-productive mRNA, which includes retained introns, and the right panel illustrating our ASOs binding to the pre-mRNA and redirecting the splicing machinery.

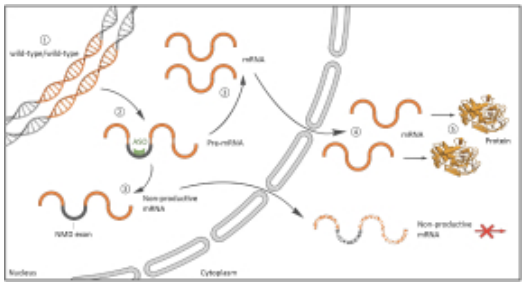




The second category of non-productive splicing events amenable to TANGO is alternative splicing that leads to nonsense-mediated mRNA decay, or NMD, of the resulting mRNA. An example of a NMD event is a NMD exon, which is found in over 25% of gene transcripts. Like retained introns, NMD exons are part of the wild-type

sequence of the genes. In some cases, NMD exons are part of normal gene regulation. Non-productive mRNA, which includes these NMD exons, is degraded in the cytoplasm of the cell by nonsense-mediated mRNA decay and is not translated into protein. Our ASOs bind to the pre-mRNA and redirect the splicing machinery to prevent inclusion of the NMD exon. As with retained introns, this splice-switching decreases non-productive mRNA and increases productive mRNA, which is translated into increased protein expression from the wild-type allele. In contrast to current exon skipping therapies, which remove a coding exon and result in a truncated protein, our TANGO mechanism skips out a non-coding NMD exon and yields a full-length functional protein. Our lead product candidate, STK-001, targets an NMD exon and the general mechanism is shown in the figure below, with the left panel showing the non-productive mRNA failing to be translated into protein and the right panel showing our ASOs binding to the pre-mRNA and redirecting the splicing machinery.





Advantages of TANGO

We believe TANGO may have several key advantages over existing and emerging therapeutic modalities, including:

- *Ability to address the underlying genetic cause of the disease.* We utilize TANGO to design ASOs to precisely upregulate protein expression, thereby addressing the underlying cause of the disease rather than the symptoms of the disease.
- *Applicability is mutation-independent.* Our ASOs upregulate expression of the wild-type allele, meaning the TANGO mechanism does not rely on targeting a specific mutation. Given this, we believe our therapies are well-suited for diseases caused by multiple mutations in a single gene, such as many haploinsufficiencies, and provide a single-drug approach that can address the full spectrum of loss-of-function mutations.
- *Utility across small and large gene targets encoding intracellular and extracellular proteins.* Our ASOs upregulate protein expression regardless of gene size and are not constrained to smaller gene targets. We believe our therapies also have the flexibility to address genes encoding intracellular as well as extracellular proteins.
- *No observed unwanted off-target effects.* Our ASOs do not create detectable changes at the DNA level and make no detectable irreversible modifications to a patient's genome. The activities of our ASOs are inherently tissue-specific. TANGO-mediated upregulation of protein expression only occurs where the gene is being naturally transcribed, limiting the likelihood of expression in non-native tissues.
- *Ability to control dose level and duration.* Our ASOs provide the ability for dose titration, thereby allowing for dose-dependent and reversible control of level and duration of protein expression. The ability to titrate dosage provides us with flexibility to address a variety of tissue types, and potentially enables us to deliver the right dose, at the right location, for each indication.
- *Utility across wide array of diseases and tissue types.* We believe that ASO delivery to the CNS, eye, kidney and liver is well-established, providing us the potential to address a broad range of genetic diseases.

Additionally, ASO delivery to the CNS is particularly well-precedented, with one FDA-approved ASO (SPINRAZA) and several others in clinical development.

- *Fixed dose, rather than weight-based dosing*. We have observed that while the quantity of non-productive mRNA can vary across tissue types for a gene, it remains constant across individuals. As a result, for CNS and eye targets, the dose of our ASOs should not require adjustment between patients to be effective. We believe that a fixed dose across all ages in these targets will lessen reimbursement hurdles associated with a weight-adjusted dose pricing model.
- *Favorable dosing regimen.* We believe our ASOs may require as few as two to three administrations per year for the CNS or the eye and will generally involve relatively low doses, which would translate to simplified use, an improved safety profile from reduced systemic exposure and lower cost of goods.
- *Simple and scalable manufacturing*. Our novel ASOs are synthesized by highly scalable, solid-phase chemical synthesis and we leverage a well-established contract manufacturing base. We believe the manufacturing requirements for our ASOs are much simpler, more scalable and more cost-effective than gene therapy and gene editing.

Our approach

We employ a systematic and capital-efficient approach to develop ASOs for genetically defined patient populations. We rely on our proprietary database to identify novel drug targets and corroborate these findings with existing knowledge to improve our probability of success in the clinic. We believe that leveraging our proprietary database and focusing on our core competencies of target identification and clinical and regulatory execution will allow us to reduce the time, cost and risks of drug development.

Target identification

We continue to make significant investments in our infrastructure to accelerate the pace and scale of target identification. We have built a significant bioinformatics capability, which includes proprietary bioinformatics algorithms and extensive in-house expertise in whole transcriptome RNA sequencing, also referred to as RNAseq. RNAseq uses next-generation sequencing to determine the quantity and sequences of RNA in a sample. We leverage large internal datasets of RNAseq from key tissues known to be addressable with antisense, such as the CNS, eye, liver and kidney, that are purpose-built to enhance the capture of non-productive events.

We employ machine learning to iteratively refine our search and scoring criteria for the most addressable non-productive mRNA elements based on internal target validation and Hit identification data. To date, we have identified and assembled a proprietary database of approximately 85,000 non-productive events in the human transcriptome. Using this large internal data set, in combination with publicly available genetic disease databases, we have identified approximately 2,900 monogenic disease-associated genes with one or more non-productive events which we believe are amenable to our TANGO technology. We believe our approach is highly predictive and enables rapid and systematic identification of those targets that are most likely to have clinical relevance, thereby increasing the probability for clinical success and accelerating the expansion of our deep emerging pipeline.

Hit identification

Once a TANGO target is validated in cells and tissue that are relevant to the disease, we employ highly-efficient cell lines to rapidly screen for Hit ASOs that can increase the target protein expression by specifically preventing the occurrence of the non-productive event in the target mRNA. ASO arrays are typically 25-50 compounds per non-productive event and utilize clinically translatable previously-validated ASO chemistries, such as 2’ methoxyethyl phosphorothioate and PMO. Hit compounds are evaluated in wild-type animal models

to identify Lead ASOs that possess suitable efficacy and safety to merit preclinical development. Lead ASOs are subsequently evaluated in animal disease models or *ex vivo* disease model systems.

Lead evaluation and prioritization

After we have identified lead compounds, we evaluate and prioritize the advancement of new development candidates based on both program-specific and portfolio-wide considerations. Program-specific criteria include, among other relevant factors, the severity of the unmet medical need, the likelihood of therapeutic utility, the feasibility of clinical development, the costs of development and the commercial opportunity. Portfolio-wide considerations include the ability to demonstrate technical success for our platform, thereby increasing the probability of success and learnings for subsequent programs. We believe that the learnings from our lead Dravet syndrome program will significantly reduce the uncertainty of development of subsequent programs in our pipeline, particularly those targeting the CNS.

Clinical trial and regulatory execution

We employ a multi-pronged approach to bring new treatments forward as rapidly as possible. Our approach leverages previously-validated ASO chemistry and a modality that has been successfully utilized for other diseases, to minimize potential safety concerns and development risk. We are also initially targeting diseases with established clinical and regulatory pathways. As an example, we intend to undertake a Phase 1/2 clinical trial for our lead program in Dravet syndrome with a design and endpoints common to other recently approved antiepileptic drugs. Additionally, we plan to begin clinical dosing in patients at a dose anticipated to have biological effect to allow for early insight into the therapeutic potential of a product candidate and the possibility for rapid clinical development and expedited regulatory pathways, such as Fast Track Designation and Breakthrough Therapy Designation.

Commercialization

We intend to retain broad commercial rights and independently bring our therapies to patients around the world through a lean, targeted internal commercial organization. To do this, we are focused on ensuring that we can effectively identify and access those patients who will benefit from our therapies. We target diseases in which genetic testing is routinely performed, thereby shortening the diagnostic odyssey and enabling rapid identification of patients who harbor the relevant genetic mutations. We have partnered with Invitae, a leading genetic information company, to provide genetic testing at no cost to the patient. Lastly, to maximize patient access, we aim to leverage an established network of academic and tertiary centers with extensive experience with analogous drug administration.

Therapeutic focus and product candidates

We believe our ASOs can be applied to treat a wide range of severe genetic diseases, and we have carefully designed and prioritized our pipeline strategy to maximize this opportunity. We are focused on applying the transformative potential of our platform to developing medicines for patients with diseases where the genetic abnormality is known and is found in a single gene. We therefore know for a given disease precisely which gene will need to be upregulated, thus mitigating against the uncertainty of the disease biology. We are currently focused on developing product candidates to treat autosomal dominant haploinsufficiency diseases, or disorders in which one copy of a gene is mutated and results in approximately 50% of normal protein expression. Within haploinsufficiencies, we believe that no other disease area holds as clear a need or as much promise for near-term medical breakthrough as genetic epilepsies, including Dravet syndrome, and therefore we are prioritizing this disease area for our near-term development efforts.

Genetic epilepsies

Epilepsy is defined as recurrent, unprovoked seizures due to abnormal, asynchronized neuronal firing in the brain. Epilepsy is the fourth most common neurologic disease and affects more than 50 million people worldwide, according to the World Health Organization as of 2019. Epilepsy is the most frequent serious chronic neurologic condition in childhood, and approximately one out of 150 children are diagnosed with epilepsy during the first 10 years of life, with the highest incidence rate observed during infancy, according to a 2017 publication in *Pediatrics*.

More than 30% of patients with epilepsy are refractory to medical treatment, especially those with a genetic epilepsy, despite the availability of approximately 20 antiepileptic drugs. This is largely because existing antiepileptic drugs primarily address the frequency of seizures and lack the capacity to rectify the underlying neuropathological processes or genetic defect. Refractory epilepsy carries the risks of structural damage to the brain and nervous system and increased risk of premature death (e.g. from sudden unexpected death in epilepsy, or SUDEP, suicide, accidents, pneumonia, or vascular disease), as well as psychological, educational, social and vocational consequences. In addition, up to 50% of patients with epilepsy have significant cognitive delay, according to a 2015 review article in *Cold Spring Harbor Perspectives*. Cognitive and behavioral comorbidities are especially common in children with refractory epilepsy. Overall outcomes in patients with epilepsy have not improved significantly over the past two decades, and a novel therapeutic approach is desperately needed to modify the development or progression of the disease and improve long-term outcomes.

A 2010 publication in *Nature Reviews Neurology* estimates that more than 50% of epilepsies are now recognized as having a genetic basis, and many of these are haploinsufficiencies. The genetic bases of both rare and common epilepsies are rapidly being elucidated, and neurologists now routinely include genetic testing for more than 180 disease-associated genes in the diagnostic work-up of epilepsy. Beyond diagnostics, a major goal of genetic testing is to enable individualized treatment choices based on the genetic cause of disease. Today, the application of genetic diagnosis for epilepsy patients is largely limited to medical contraindications, such as avoidance or removal of ion channel blockers for an ion channel deficiency, given that there are no genetically-targeted medicines available for genetic epilepsy patients.

Several hundred epilepsy-related genes have been identified to date, including genes encoding neuronal ion channels and receptors and genes involved in cellular signaling. For example, the number of genes included on the epilepsy panel of Invitae Corporation, a leading genetic information company, has grown from 103 in 2015 to 187 in 2019. Globally, advances in molecular technology are expected to result in discoveries of additional genetic etiologies of epilepsy, implying a greater role than ever before for genetics in the epilepsy clinic.

The table below lists select genes that are commonly mutated amongst patients with epilepsy and we believe are amenable to TANGO, with current estimates of their prevalence. We are continuing to evaluate these CNS targets and expect to nominate a second genetic disease candidate for preclinical development by the first half of 2020.

Gene	Disease	Estimated worldwide prevalence
SCN1A	Dravet Syndrome	5-5.5 in 100,000
TSC2	Tuberous Sclerosis 2	7-8 in 100,000
MECP2	Rett Syndrome	5 in 100,000
TSC1	Tuberous Sclerosis 1	2-3 in 100,000
SCN2A	Epileptic Encephalopathy	1-2 in 100,000
CHD2	CHD2-Myoclonic Epilepsy	1-2 in 100,000
SYNGAP1	Autosomal Dominant Mental Retardation 5	1 in 100,000
SCL6A1	Epileptic Encephalopathy	1 in 100,000
SCN8A	Epileptic Encephalopathy	1 in 100,000
CACNA1A	Episodic Ataxia, Type 2	<1 in 100,000

For some genes, the phenotypic spectrum expands beyond the epilepsies to other neurodevelopmental disorders, including autism and intellectual disability. For example, although most patients with mutations in *STXBP1*, *SYNGAP1* or *CHD2* present with seizures, mutations in these genes have also been identified in individuals with intellectual disability or autism spectrum disorder, but without epilepsy. These neurodevelopmental disorders are not addressed with existing antiepileptic drugs.

Dravet syndrome—STK-001

Our most advanced program is a potentially disease-modifying treatment for Dravet syndrome, a severe and progressive genetic epilepsy. STK-001 is a proprietary ASO and utilizes an established delivery mechanism of intrathecal delivery to target the CNS. We intend to apply for Orphan Drug Designation from the FDA in the first half of 2019 and submit an IND by early 2020. We expect to initiate a Phase 1/2 clinical trial in children and adolescents with Dravet syndrome in the first half of 2020 and anticipate clinical data, including preliminary efficacy data, in 2021. If we see evidence of efficacy following clinical data, then we would plan to meet with regulatory authorities to discuss expedited regulatory pathways, such as Fast Track Designation and Breakthrough Therapy Designation.

Dravet syndrome disease overview

Dravet syndrome is one of the most severe genetic epilepsies and affects approximately 6.4 in 100,000 people worldwide, including 5-5.5 in 100,000 people who possess a mutation in the *SCN1A* gene, according to a 2018 market research report commissioned by us and prepared by Health Advances, LLC, or the Health Advances Report. The disease is caused by a pathogenic mutation or deletion of the *SCN1A* gene in approximately 85% of patients. At least 1,250 different *de novo* mutations in the *SCN1A* gene have been identified to date in Dravet syndrome patients, including single nucleotide substitutions, small insertions or deletions and even whole gene deletions. *SCN1A* codes for the alpha subunit of the voltage-gated sodium channel, or $Na_v1.1$ protein, an ion channel that is essential for the generation and propagation of action potentials. More than 95% of the disease-causing mutations of *SCN1A* cause loss-of-function, resulting in haploinsufficiency (approximately 50% reduction) of the $Na_v1.1$ protein in select neurons in the brain. This loss of $Na_v1.1$ channels in inhibitory interneurons and other nerve cells results in Dravet syndrome.

Dravet syndrome is characterized by multiple seizure types and may progress to status epilepticus or prolonged seizures lasting more than five minutes that require immediate intervention. Patients typically experience their first seizure before 12 months of age. More than 90% of patients suffer from at least one non-seizure comorbidity, including severe intellectual and developmental disabilities, motor and speech impairment, autism, attention deficit hyperactivity disorder and behavioral difficulties. Neurologic function and cognition are usually normal in children with Dravet syndrome up to two years of age. However, nearly all Dravet syndrome patients exhibit intellectual impairment by the age of four, ranging from minor learning difficulty to global developmental delay. The time between one year and eight years of age is a critical period for intervention. After eight years of age, nearly all Dravet syndrome patients exhibit evidence of substantial developmental delay. The symptoms of the disease result in remarkably low quality of life and shortened life expectancy, and as a result impose an immense burden on individuals and families.

The cognitive impairment in Dravet syndrome is not purely a consequence of seizures. Patients with few seizures have been observed to possess severe encephalopathy, and conversely patients with frequent seizures have been observed to exhibit relatively minimal cognitive decline. In addition, there does not appear to be a correlation between cognitive outcome and *SCN1A* mutation type, whether a missense or truncating mutation.

Importantly, patients with Dravet syndrome have an increased risk of premature death, primarily due to SUDEP. Dravet syndrome patients have the highest SUDEP rate of any epilepsy. An analysis of mortality in the Epilepsy Genetics Research Program demonstrated a Dravet syndrome-specific mortality rate of 15.84 per 1,000 patient years. SUDEP was the most common cause of premature death among Dravet syndrome patients (59%), equating to a Dravet syndrome-specific SUDEP rate of 9.32 per 1,000 patient-years. This is nearly twice the rate for adults with refractory epilepsy.

Patients with Dravet syndrome are often diagnosed by three years of age, and neither patient gender nor family history of seizures is associated with risk of Dravet syndrome. Dravet syndrome occurs worldwide and is not concentrated in any particular geographic area or ethnic group. Early diagnosis is driven by heightened awareness of Dravet syndrome and other genetic epilepsy disorders as well as an emerging consensus amongst epilepsy specialists that early diagnosis is cost-effective and beneficial for prognosis. Among pediatric Dravet syndrome patients, approximately 60% in North America and 70% in Germany, France and the United Kingdom undergo genetic testing as part of their diagnostic work-up, according to the Health Advances Report. We expect this to increase to approximately 85% globally by 2024 in the aggregate. The incidence of Dravet syndrome is approximately 64 per million births, which translates to an overall prevalence of approximately 35,000 patients across the United States, Canada, Japan, Germany, France and the United Kingdom, with approximately 16,000 patients in the United States. By comparison, the prevalence of spinal muscular atrophy is approximately 10,000 patients in the United States.

Current treatments

Current treatments for Dravet syndrome only address the occurrence of seizures, not the underlying cause, and they do so very poorly, with more than 90% of Dravet syndrome patients not having adequate seizure control with existing antiepileptic regimens. As a result, the current treatment strategy involves the use of multiple antiepileptic drugs, including combinations of cannabidiol, stiripentol, clobazam, valproate, topiramate and others. Patients are typically treated with two to four drugs administered concomitantly, and in most cases the relief provided by polytherapy is insufficient.

Cannabidiol (Epidiolex) and stiripentol (Diacomit) are currently the only FDA-approved antiepileptic drugs for the treatment of Dravet syndrome. Cannabidiol was approved in 2018 for the adjunctive treatment of seizures associated with Lennox-Gastaut syndrome and Dravet syndrome in patients two years of age and older. Diacomit was approved in 2018 for the treatment of seizures associated with Dravet syndrome in patients two

years of age and older taking clobazam. There are no clinical data to support the use of Diacomit as monotherapy in Dravet syndrome. These new therapies were approved based on a demonstrated reduction in seizure frequency; however, very few patients had complete control of seizure activity. For patients treated with Epidiolex, only 6.7% reported no convulsive seizures during the treatment period, according to clinical trial data in the drug's prescribing information. Tolerance, or a significant diminishment of efficacy over time, is also observed in approximately 25% of patients, thereby limiting the usefulness of this treatment in the long-term clinical management of patients with Dravet syndrome. These drugs also do not address the significant non-seizure comorbidities. Additionally, cannabinoids as a drug class have been associated with adverse effects on cognitive development in children.

Fenfluramine (Fintepla) is an antiepileptic drug in clinical development for the treatment of Dravet syndrome. Topline efficacy data for seizure frequency were favorable; however, as with Epidiolex and Diacomit, seizure-free rates remain in the low single digits. Moreover, patients are still likely to be affected by non-seizure comorbidities and may develop tolerance to the drug over time.

Many of the antiepileptic drugs that are used to treat Dravet syndrome can carry a substantial adverse event burden. Some of the adverse events can cause deleterious effects on cognition and lead to sedation, somnolence, inattention and fatigue, and potentially lead to death. These adverse effects may exacerbate the underlying cognitive deficits that are part of the natural course of Dravet syndrome. Patients often require regular office visits and laboratory testing to monitor toxicity to vital organ systems, especially the liver, which may be further compounded by polytherapy and associated drug-drug interactions. Despite these risks, the continued use of these medications demonstrates the importance of reducing the frequency of seizures to the patients, caregivers and the prescribing neurologists.

Patients with Dravet syndrome need a novel therapeutic that addresses the genetic basis of the disease and treats the large number of seizures and multiple seizure types that persist despite treatment with existing therapy. Importantly, additional therapy options are needed to address the disabling comorbidities that occur with Dravet syndrome. We believe our precision medicine approach may have a profound impact on individuals and families.

STK-001: Product candidate

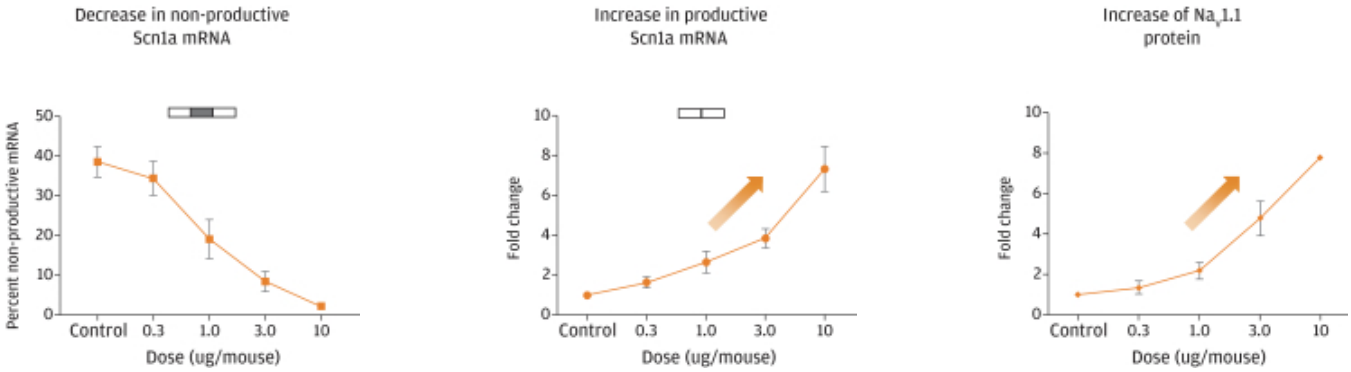
We believe that STK-001 has the potential to be the first disease-modifying therapy to address the genetic cause of Dravet syndrome by restoring physiological $Na_v1.1$ levels and reducing both occurrence of seizures and significant non-seizure comorbidities.

STK-001: Preclinical data

We have generated compelling preclinical data that we believe demonstrates proof-of-mechanism for STK-001. Our initial target engagement, pharmacology and efficacy studies were performed in mice, including both wild-type and a Dravet syndrome mouse model. The Dravet syndrome mouse model replicates many of the symptoms of Dravet syndrome patients, and the targeted non-productive splicing event in *SCN1A* is highly conserved across multiple species, including mouse, non-human primates and humans. The target sequence for STK-001 is also identical across species.

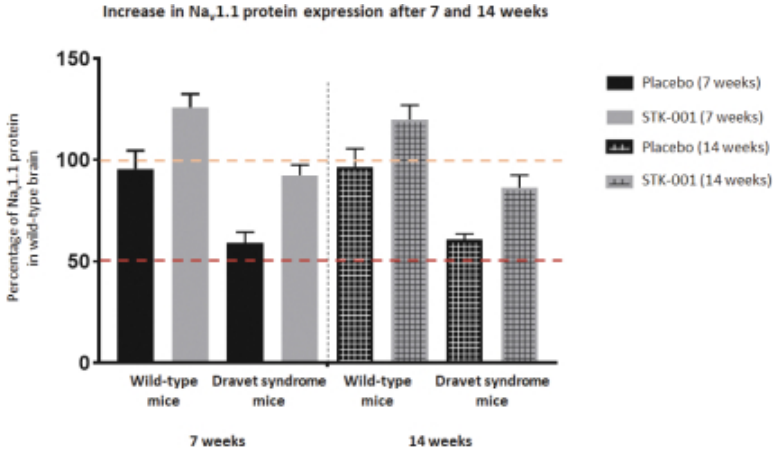
In wild-type mice, we characterized target engagement and pharmacology of STK-001. Neonate (postnatal day one) mice were administered a single injection dose of 0.3, 1.0. 3.0 and 10.0 µg of STK-001 (N=3-6/group) by intracerebroventricular injection and returned to the home cage for five days. Sections of the brain were processed for RNA and protein. We observed that treatment with STK-001 resulted in a dose-dependent

reduction of non-productive mRNA. Furthermore, the reduction of non-productive mRNA was associated with an increase of productive mRNA and an increase in $Na_v1.1$ protein, as denoted in the figures below.

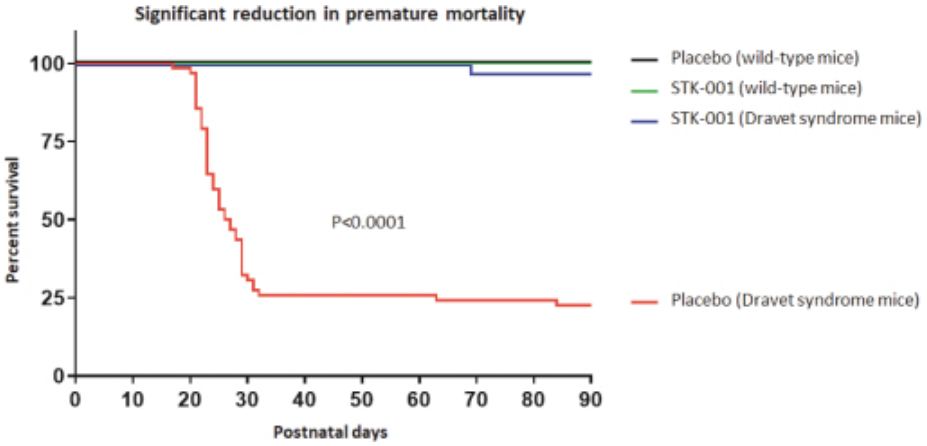


We also evaluated STK-001 pharmacology and efficacy in transgenic mice with a heterozygous deletion of *Scn1a*. This model was created by introducing a targeted deletion in the first coding exon of the *Scn1a* gene; these mice exhibit many aspects of the Dravet syndrome phenotype including seizures and premature lethality.

Neonate (postnatal day two) and wild-type littermate controls were administered a single dose of either placebo (consisting of a phosphate-buffered solution), or 20 µg of STK-001 (N=~50/group) by intracerebroventricular injection. Animals from each group were monitored through day 90. Brains were collected from cohorts of these animals (n=4-11/group) at approximately 7 weeks after dosing and 14 weeks after dosing. Notably, as shown in the figure below, a single injection of STK-001 restored $Na_v1.1$ protein in Dravet syndrome mice to levels that are near those of the wild-type mice at both 7 and 14 weeks. These data demonstrate that STK-001 has an impact on $Na_v1.1$ protein expression and we believe this will translate to a favorable dosing regimen in humans.

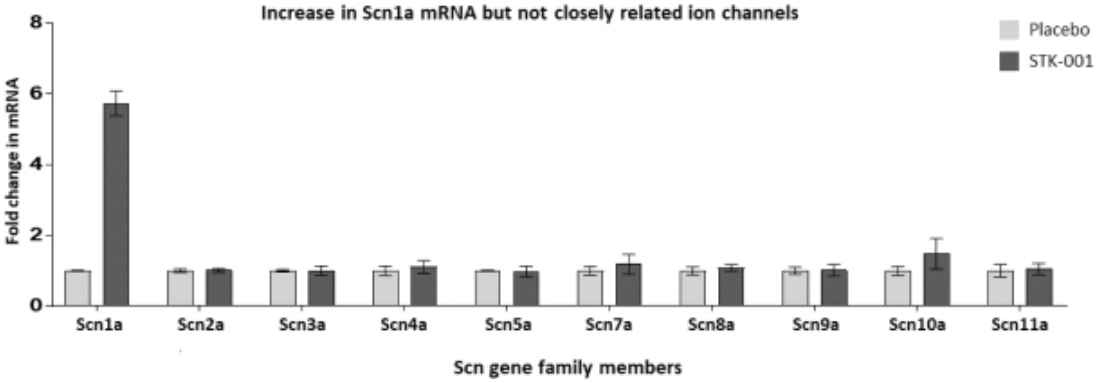


In addition to an increase in the $Na_v1.1$ protein, the administration of a single dose of 20 µg of STK-001 in Dravet syndrome mice resulted in a significant reduction in premature mortality. Treatment with STK-001 resulted in 97% survival of Dravet syndrome mice for the 90-day post-natal observation period (survival of 33 out of 34 mice was observed in the STK-001 Dravet syndrome mouse group) compared with 23% survival of placebo-treated mice (survival of 14 out of 62 mice). This is illustrated in the figure below.



Analyses were also performed *in silico* to understand the specificity of STK-001. We evaluated STK-001 via bioinformatic analysis against all annotated protein-coding genes to predict potential off-target activities. Results showed no perfect 18- to 16-nucleotide match for STK-001 anywhere in the transcriptome other than *SCN1A* pre-mRNA, indicating that STK-001 recognizes a unique sequence in the human transcriptome. By comparison to the approved drug SPINRAZA, STK-001 possesses less predicted off-target activities.

Further supporting our specificity analysis, we also evaluated brain samples of wild-type neonate mice to ensure that STK-001 does not alter levels of other channels in the highly homologous *SCN* family. Importantly, the mRNA levels of closely related ion channels was not altered in the mouse brain five days after administration of 10 µg of STK-001 (n=2/group placebo, n=4/group STK-001), as shown in the figure below. Similar analysis was performed in wild-type and Dravet syndrome mice treated with 20 µg of STK-001 at 7 and 14 weeks after dosing. STK-001 treated samples showed an increase in expression of the *SCN1A* gene, but not any of the other *SCN* family members. These biological studies demonstrate that STK-001 is highly specific for *SCN1A* among the highly homologous family of sodium channel genes, limiting the likelihood of off-target activities.



We also investigated the pharmacology, distribution and tolerability of STK-001 in a non-Good Laboratory Practice, or GLP, study with cynomolgus monkeys. Pre-pubescent monkeys (age 2-2.5 years old) were administered a single dose of STK-001 or control solution (N=2-3/group, 6 groups) by intrathecal injection at a dose range that we believe coincides with the estimated therapeutic dose range and stays below the maximum tolerated dose based on tolerability in mice and published data for molecules of similar chemistry. The animals were sacrificed at 3 days and 29 days after dosing. A two-fold increase in the $Na_v1.1$ protein was observed. The increase in $Na_v1.1$ was also correlated with the presence of STK-001 in brain tissue. Additionally, all doses tested showed no drug-related toxicities, including no changes in platelet counts or hepatic function, no clinical signs or symptoms over the 28-day period after administration and no abnormal histopathology.

Further studies in rats and cynomolgus monkeys, including GLP single and multiple dose toxicology studies, are planned to further characterize the pharmacology, exposure and tolerability of STK-001 and will be necessary to support an IND.

STK-001: Clinical plan

We expect our Phase 1/2 trial to be a two-part study to evaluate STK-001 in children and adolescents with Dravet syndrome. Patients will be eligible for the trial if they are between the ages of 2 to 18, have had four or more convulsive seizures during a four-week pre-dosing observation period, have an established diagnosis of Dravet syndrome and have evidence of a pathogenic genetic mutation in the *SCN1A* gene. Requiring an *SCN1A* mutation (of which more than 1,250 *SCN1A* mutations have been identified) for trial enrollment allows for a clear and definitive etiologic diagnosis, a more homogeneous patient population and tailored treatment based on a precision medicine approach. Eligible patients will also have failed at least two epilepsy treatments in the past and currently be taking at least one antiepileptic drug. All medications and interventions will remain unchanged throughout the trial, which will allow for assessment of STK-001 with a variety of antiepileptic therapies.

The trial will be conducted in two parts: single ascending dose and multiple ascending dose. The primary objectives will be to assess the safety and tolerability of STK-001, as well as to characterize human pharmacokinetics. A secondary objective will be to assess the efficacy as an adjunctive antiepileptic treatment with respect to the percentage change from baseline in convulsive seizure frequency over 12-week treatment period. We also intend to measure non-seizure aspects of the disease, such as cognitive function, behavior, sleep or quality of life as exploratory endpoints. These exploratory endpoints will be informed based on our planned observational study, which is designed to evaluate the course of neurodevelopmental status and adaptive status, quality of life, gait and ambulation in patients with Dravet syndrome over a timespan of two years. To help identify patients eligible for our studies, we have an ongoing partnership with Invitae Corporation to offer epilepsy panel testing at no cost to any child up to 60 months who has had an unprovoked seizure. Patients enrolled in our observational study will be eligible for enrollment in our Phase 1/2 clinical trial.

Importantly, recently approved antiepileptic drugs for Dravet syndrome, such as Epidiolex, provide a potential regulatory pathway to approval on defined seizure control endpoints. We will be leveraging an analogous trial design, including a four-week pre-dosing observation period to assess baseline seizure frequency, cognitive function and serum chemistries, a 12-week treatment period and a 6-month safety follow-up. We plan to begin clinical dosing at the minimum anticipated biological effect level given the limited treatment options for this patient population, known pharmacology and mechanism of action of STK-001, and reasonable confidence in the predictive value of the preclinical data generated in non-human primates. Dosing by intrathecal injections will be fixed across the patient population given that the quantity of non-productive mRNA remains constant across individuals and that the total cerebral spinal fluid volume is similar between adults and children.

We plan to submit an IND for STK-001 by early 2020. We expect to initiate the Phase 1/2 trial in the first half of 2020 and we anticipate preliminary clinical data for the primary and secondary endpoints of our single

ascending dose phase in 2021. While we have not yet discussed with regulatory authorities the evidence necessary for approval of STK-001, if we see evidence of efficacy following clinical data, then we would plan to meet with regulatory authorities to discuss expedited regulatory pathways, such as Fast Track Designation and Breakthrough Therapy Designation.

Additional product opportunities

Dravet syndrome and genetic epilepsies are one disease area within a broader pipeline of first-in-class precision medicines for treatment of haploinsufficiency diseases. We intend to nominate a second genetic disease preclinical candidate by the first half of 2020 and will seek to further establish a pipeline of product candidates in the future. Since ASOs have been previously shown to have a very long half-life when injected into the eye and could provide therapeutics with dosing regimens of two to three administrations per year, we are exploring certain ophthalmologic diseases that could be treated through upregulation of protein pathways to reduce inflammation, block neovascularization and reduce retinal degeneration.

We are also advancing several early programs focused on multiple targets, including haploinsufficiency diseases of the CNS, eye, kidney and liver, given the ability of our ASOs to target cells in these organs. These tissues are affected in many severe genetic diseases. Additional non-epilepsy indications for which our technology may be applicable include autosomal dominant optic atrophy and autosomal dominant polycystic kidney disease.

Longer-term, we believe that ASOs designed using TANGO may have the potential to upregulate non-mutated genes in biological pathways to treat diseases or conditions caused by multiple genes or are multifactorial, such as autoimmune diseases, aging and cancer. For these diseases, we intend to opportunistically secure partnerships with pharma partners whose scientific, development or commercial capabilities complement our own.

Manufacturing

We currently contract with third parties to manufacture our products undergoing late-preclinical testing and anticipate using third parties for all commercial manufacturing. We do not own or operate facilities for product manufacturing, packaging, storage and distribution, or testing. We have personnel with extensive technical, manufacturing, analytical and quality experience and good project management to oversee contract manufacturing and testing activities. We will continue to expand and strengthen our network of third-party providers but may also consider investing in internal manufacturing capabilities in the future if there is a technical need, or a strategic or financial benefit.

Manufacturing is subject to extensive regulations that impose procedural and documentation requirements. At a minimum these regulations govern record keeping, manufacturing processes and controls, personnel, quality control and quality assurance. Our systems and contractors are required to be in compliance with these regulations and are assessed through regular monitoring and formal audits.

Drug substance

Oligonucleotide drug substance requirements for our most advanced programs can be readily met by a variety of domestic and international contractors. Many of these contractors are also able to source all the required raw materials, which allows us to consolidate raw material procurement and drug substance manufacturing activities with a single supplier. To ensure supply chain continuity, we plan to establish supply agreements with alternative suppliers as appropriate. As part of each development program, efforts will be made to invest in process changes to improve purity and yield as warranted.

Future drug substance compositions may require different manufacturing capabilities, which will be addressed through either expanded capability with existing contractors or establishing manufacturing supply relationships

with new contractors. These changes in composition may also require new supply chain agreements with contractors that specialize in raw material manufacturing. Our internal personnel will work to identify and establish relationships with contractors that may be ideally suited to meeting these new manufacturing requirements.

Drug product

In the near future, we expect all our oligonucleotide drug products to consist of drug substance formulated in either saline, buffered saline, or some other diluent appropriate for intrathecal, intraocular, subcutaneous, or intravenous injection. These types of formulations can be manufactured using common processes and readily available materials. We are establishing agreements with a variety of contractors that are suitably equipped to manufacture, package, and test these types of oligonucleotide drug product formulations for subsequent shipment to clinical sites. Several of these manufacturers would also be capable of formulation and packaging for commercial use.

Competition

The biotechnology and biopharmaceutical industries, and the genetic medicines fields, are characterized by rapid evolution of technologies, fierce competition and strong defense of intellectual property. Any product candidates that we successfully develop and commercialize will have to compete with existing therapies and new therapies that may become available in the future. While we believe that our technology, development experience and scientific knowledge in the field of biologics, RNA splicing, and antisense oligonucleotide chemistry provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical and biotechnology companies, academic institutions and governmental agencies, and public and private research institutions that conduct research, seek patent protection, and establish collaborative arrangements for research, development, manufacturing and commercialization.

While therapeutic modalities, including gene therapy, gene editing, modified RNA and protein-based drugs, are currently being developed to address monogenic diseases, most of these approaches are focused on autosomal recessive or autosomal dominant gain-of-function diseases. The nature and fundamental limitations of these approaches make them less suited for addressing the underlying cause of autosomal dominant haploinsufficiencies. Other next generation antisense oligonucleotides have also generally had limited success in upregulating gene expression of haploinsufficiencies, due to a focus on indirectly and weakly validated mechanisms of action such as targeting microRNAs or long non-coding RNAs that are associated with a gene transcript. We are pioneers in developing disease-modifying therapies to treat haploinsufficiencies and are uniquely positioned to exploit this significant opportunity with our TANGO platform.

If our current product candidate, STK-001, is approved for the treatment of Dravet syndrome, it may compete with other products currently marketed or in development. Currently marketed antiepileptic drugs range from cannabidiols, such as GW Pharmaceuticals, plc's Epidiolex, to GABA receptor agonists, such as clobazam, to glutamate blockers, such as topiramate. Many of the currently marketed antiepileptic drugs are available as generics. In addition, numerous compounds are in clinical development for treatment of epilepsy. To our knowledge, the clinical development pipeline includes cannabinoids, 5-HT release stimulants, cholesterol 24-hydroxylase inhibitors, and sodium channel antagonists from a variety of companies. Importantly, we believe none of these small molecule drugs address the underlying genetic cause of Dravet syndrome.

Many of our competitors, either alone or with strategic partners, have substantially greater financial, technical and human resources than we do. Accordingly, our competitors may be more successful than us in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining approval for treatments and achieving widespread market acceptance, rendering our treatments obsolete or non-competitive. Merger

and acquisition activity in the biotechnology and biopharmaceutical industries may result in even more resources being concentrated among a smaller number of our competitors. These companies also compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials and acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. Our commercial opportunity could be substantially limited if our competitors develop and commercialize products that are more effective, safer, less toxic, more convenient or less expensive than our comparable products. In geographies that are critical to our commercial success, competitors may also obtain regulatory approvals before us, resulting in our competitors building a strong market position in advance of the entry of our products. In addition, our ability to compete may be affected in many cases by insurers or other third-party payors seeking to encourage the use of other drugs. The key competitive factors affecting the successful of all of our programs are likely to be their efficacy, safety, convenience and availability of reimbursement.

Reimbursement

The regulations that govern pricing and reimbursement for new drugs vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription biopharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, a drug company can obtain regulatory approval for a product in a country, but then be subject to price regulations that delay commercial launch of that product.

A drug company’s ability to commercialize any products successfully will also depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government authorities, private health insurers and other organizations. Even if one or more products are successfully brought to the market, these products may not be considered cost effective, and the amount reimbursed for such products may be insufficient to allow them to be sold on a competitive basis. Third-party payors who reimburse patients or healthcare providers, such as government plans, are requiring that drug companies provide them with predetermined discounts from list prices and are seeking to reduce the prices charged or the amounts reimbursed for biopharmaceutical products.

Significant delays can occur in obtaining reimbursement for newly-approved drugs or therapeutic biologics, and coverage may be more limited than the purposes for which the drug or therapeutic biologic is approved by the FDA or similar foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drug will be reimbursed in all cases or at a rate that covers a drug company’s costs, including research, development, manufacture, sale and distribution.

Interim reimbursement levels for new drugs, if applicable, may also be insufficient to cover a drug company’s costs and may not be made permanent. Reimbursement rates may be based on payments allowed for lower cost drugs or therapeutic biologics that are already reimbursed, may be incorporated into existing payments for other services and may reflect budgetary constraints or imperfections in Medicare data. Net prices for drugs or therapeutic biologics may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs or therapeutic biologics from countries where they may be sold at lower prices than in the United States. Further, no uniform policy for coverage and reimbursement exists in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. Therefore, coverage and reimbursement can differ significantly from payor to payor.

Intellectual property

We strive to protect and enhance the proprietary technology, inventions and improvements that are commercially important to our business, including obtaining, maintaining and defending patent rights, whether developed internally or licensed from third parties. Our policy is to seek to protect our proprietary position by, among, other methods, pursuing and obtaining patent protection in the United States and in jurisdictions outside of the United States related to our proprietary technology, inventions, improvements, platforms and product candidates that are important to the development and implementation of our business. Our patent portfolio, including in-licensed patents and patent applications, is intended to cover, but is not limited to, our technology platforms, product candidates and components thereof, their methods of use and processes for their manufacture, and any other inventions that are commercially important to our business. We also rely on trade secret protection of our confidential information and know-how relating to our proprietary technology, platforms and product candidates, continuing innovation, and in-licensing opportunities to develop, strengthen, and maintain our position in our TANGO platform and product candidates. Our commercial success may depend in part on our ability to obtain and maintain patent and other proprietary protection for our technology, inventions and improvements; to preserve the confidentiality of our trade secrets; to maintain our licenses to use intellectual property owned or controlled by third parties; to defend and enforce our proprietary rights, including our patents; to defend against challenges and assertions by third parties of their purported intellectual property rights; and to operate without infringement of valid and enforceable patents and other proprietary rights of third parties.

With respect to our TANGO platform, we have exclusively licensed intellectual property for our TANGO technology from the University of Southampton and Cold Spring Harbor Laboratory, which includes issued U.S. patents and pending U.S. and foreign patent applications that cover the TANGO mechanisms. As of March 15, 2019, there are approximately three issued U.S. patents, approximately two pending U.S. patent applications and approximately 23 pending foreign patent applications that we have licensed from the University of Southampton, which are anticipated to expire between 2035 and 2036, absent any patent term adjustments or extensions. As of March 15, 2019, there is one issued U.S. patent, one pending U.S. patent application and approximately ten pending foreign patent applications that we have licensed from Cold Spring Harbor Laboratory, which are anticipated to expire in 2035, absent any patent term adjustments or extensions.

Separately, we have filed patent applications with claims that are intended to cover compositions of matter of oligonucleotides designed to target specific elements in genes for more than 140 genetic diseases that we believe are amenable to upregulation of target protein expression using our TANGO platform. As of March 15, 2019, these filed patent applications include approximately two PCT international applications, approximately seven such U.S. patent applications, and approximately 34 such foreign patent applications. Any patents that may issue from these currently pending patent applications are expected to expire between 2036 and 2040, absent any patent term adjustments or extensions.

With respect to STK-001, as of March 15, 2019, we have exclusively licensed one issued U.S. patent, one pending U.S. patent application and approximately 12 pending foreign patent applications. The issued patent and any patents that may issue from these pending patent applications are expected to expire between 2035 and 2036, absent any patent term adjustments or extensions. As of March 15, 2019, we also own one pending PCT international application and approximately three pending U.S. patent applications relating to STK-001, and any patents that may issue from these pending patent applications are expected to expire between 2038 and 2040, absent any patent term adjustments or extensions.

The term of individual patents depends upon the laws of the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing of a non-provisional patent application. However, the term of United States patents may be extended for delays incurred due to compliance

with the FDA requirements or by delays encountered during prosecution that are caused by the United States Patent and Trademark Office, or the USPTO. For example, for drugs that are regulated by the FDA under the Hatch-Waxman Act, it is permitted to extend the term of a patent that covers such drug for up to five years beyond the normal expiration date of the patent. For more information on patent term extensions, see “Business—Government regulation: The Hatch-Waxman Act—Patent term extension”. In the future, if and when our biopharmaceutical product candidates receive FDA approval, we expect to apply for patent term extensions on patents covering those product candidates. We intend to seek patent term extensions to any of our issued patents in any jurisdiction where these are available; however, there is no guarantee that the applicable authorities, including the USPTO and FDA, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such extensions. Our currently issued patents will likely expire on dates ranging from 2035 to 2036, unless we receive patent term extension or patent term adjustment, or both. If patents are issued on our pending patent applications, the resulting patents are projected to expire on dates ranging from 2036 to 2040, unless we receive patent term extension or patent term adjustment, or both. However, the actual protection afforded by a patent varies on a product-by-product basis, from country-to-country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patent.

The patent positions of companies like ours are generally uncertain and involve complex legal and factual questions. No consistent policy regarding the scope of claims allowable in patents in the field of genetic therapy has emerged in the United States. The patent situation outside of the United States is even more uncertain. Changes in the patent laws and rules, either by legislation, judicial decisions, or regulatory interpretation in the United States and other countries may diminish our ability to protect our inventions and enforce our intellectual property rights, and more generally could affect the value of our intellectual property. In particular, our ability to stop third parties from making, using, selling, offering to sell, importing or otherwise commercializing any of our patented inventions, either directly or indirectly, will depend in part on our success in obtaining, defending and enforcing patent claims that cover our technology, inventions, and improvements. With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our platform and product candidates and the methods used to manufacture them. Moreover, our issued patents and those that may issue in the future may not guarantee us the right to practice our technology in relation to the commercialization of our platform’s product candidates. The area of patent and other intellectual property rights in biotechnology is an evolving one with many risks and uncertainties, and third parties may have blocking patents that could be used to prevent us from commercializing our TANGO platform and product candidates and practicing our proprietary technology. Our issued patents and those that may issue in the future may be challenged, narrowed, circumvented or invalidated, which could limit our ability to stop competitors from marketing related platforms or product candidates or limit the length of the term of patent protection that we may have for our TANGO platform and product candidates. In addition, the rights granted under any issued patents may not provide us with protection or competitive advantages against competitors with similar technology. Furthermore, our competitors may independently develop similar technologies. For these reasons, we may have competition for our TANGO platform and product candidates. Moreover, because of the extensive time required for development, testing and regulatory review of a potential product, it is possible that before any product candidate can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thereby reducing any advantage of the patent. For this and other risks related to our proprietary technology, inventions, improvements, platforms and product candidates, please see the section entitled “Risk factors—Risks related to our intellectual property.”

We intend to file applications for trademark registrations in connection with our product candidates in various jurisdictions, including the United States. We have filed for trademark protection of the Stoke Therapeutics mark with the United States Patent and Trademark Office and foreign patent and trademark organizations. The Stoke Therapeutics mark was registered by the United States Patent and Trademark Office in 2017, in the European Union in 2016, in Japan in 2016, in China in 2017, in India in 2016, and in Singapore in 2016. We have chosen to not file for trademark protection of the TANGO mark.

We also rely on trade secret protection for our confidential and proprietary information. Although we take steps to protect our confidential and proprietary information as trade secrets, including through contractual means with our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors, third parties may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets or disclose our technology. Thus, we may not be able to meaningfully protect our trade secrets. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements under the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual during the individual's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees, the agreements provide that all inventions conceived by the individual, and which are related to our current or planned business or research and development or made during normal working hours, on our premises or using our equipment or proprietary information, are our exclusive property. In many cases our confidentiality and other agreements with consultants, outside scientific collaborators, sponsored researchers and other advisors require them to assign or grant us licenses to inventions they invent as a result of the work or services they render under such agreements or grant us an option to negotiate a license to use such inventions. Despite these efforts, we cannot provide any assurances that all such agreements have been duly executed, and any of these parties may breach the agreements and disclose our proprietary information, and we may not be able to obtain adequate remedies for such breaches.

We also seek to preserve the integrity and confidentiality of our proprietary technology and processes by maintaining physical security of our premises and physical and electronic security of our information technology systems. Although we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. To the extent that our employees, contractors, consultants, collaborators and advisors use intellectual property owned by others in their work for us, disputes may arise as to the rights in relation to the resulting know-how or inventions. For more information, please see the section entitled "Risk factors – Risks related to our intellectual property."

License agreements

Cold Spring Harbor Laboratory

In July 2015, we entered into a worldwide license agreement with CSHL, or the CSHL Agreement, with respect to the TANGO patents. Under the CSHL Agreement, we receive an exclusive (except with respect to certain government rights and non-exclusive licenses), worldwide license under certain patents and applications relating to TANGO. As part of the CSHL Agreement, we granted CSHL 1,640,608 shares of common stock. The CSHL Agreement obligates us to make additional payments that are contingent upon certain milestones being achieved as well as royalties on future product sales. These royalty obligations last on a product-by-product and country-by-country basis until the latest of (i) the expiration of the last valid claim of a patent covering a subject product or (ii) the expiration of any regulatory exclusivity for the subject product in a country. In addition, if we sublicense rights under the CSHL Agreement, we are required to pay a percentage of the sublicense revenue to CSHL, which may be reduced upon achievement of certain milestones for the applicable subject product. The maximum aggregate potential milestone payments payable total approximately $900,000.

Additionally, certain licenses under the CSHL Agreement require us to reimburse CSHL for certain past and ongoing patent related expenses, however there were no expenses related to these reimbursable patent costs during the years ended December 31, 2018 and 2017.

University of Southampton

In April 2016, we entered into an exclusive, worldwide license agreement with the University of Southampton, or the Southampton Agreement, whereby we acquired rights to foundational technologies related to our TANGO technology. Under the Southampton Agreement, we receive an exclusive, worldwide license under certain licensed patents and applications relating to TANGO. As part of the Southampton Agreement, we paid 55,000 pounds sterling (approximately $72,000 as of the date thereof) as an up-front license fee. Under the Southampton Agreement, we may be obligated to make additional payments that are contingent upon certain milestones being achieved, as well as royalties on future product sales. These royalty obligations survive until the latest of (i) the expiration of the last valid claim of a licensed patent covering a subject product or (ii) the expiration of any regulatory exclusivity for the subject product in a country. In addition, if we sublicense our rights under the Southampton Agreement, we are required to pay a mid-single digit percentage of the sublicense revenue to the University of Southampton. The maximum aggregate potential milestone payments payable by us total approximately 400,000 pounds sterling (approximately $508,000 as of December 31, 2018). As of December 31, 2018, and 2017, we have recorded no liabilities under the Southampton Agreement.

Government regulation

FDA approval process

In the United States, pharmaceutical products are subject to extensive regulation by FDA. The Federal Food, Drug, and Cosmetic Act and other federal and state statutes and regulations govern, among other things, the research, development, testing, manufacture, storage, recordkeeping, approval, labeling, promotion and marketing, distribution, post-approval monitoring and reporting, sampling and import and export of pharmaceutical products. Failure to comply with applicable U.S. requirements may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending new drug applications, or NDAs, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties and criminal prosecution.

Pharmaceutical product development for a new product or certain changes to an approved product in the U.S. typically involves preclinical laboratory and animal tests, the submission to FDA of an IND which must become effective before clinical testing may commence, and adequate and well-controlled clinical trials to establish the safety and effectiveness of the drug for each indication for which FDA approval is sought. Satisfaction of FDA pre-market approval requirements typically takes many years and the actual time required may vary substantially based upon the type, complexity and novelty of the product or disease.

Preclinical tests include laboratory evaluation of product chemistry, formulation and toxicity, as well as animal trials to assess the characteristics and potential safety and efficacy of the product. The conduct of the preclinical tests must comply with federal regulations and requirements, including good laboratory practices. The results of preclinical testing are submitted to FDA as part of an IND along with other information, including information about product chemistry, manufacturing and controls, and a proposed clinical trial protocol. Long-term preclinical tests, such as animal tests of reproductive toxicity and carcinogenicity, may continue after the IND is submitted.

A 30-day waiting period after the submission of each IND is required prior to the commencement of clinical testing in humans. If FDA has neither commented on nor questioned the IND within this 30-day period, the clinical trial proposed in the IND may begin.

Clinical trials involve the administration of the investigational new drug to healthy volunteers or patients under the supervision of a qualified investigator. Clinical trials must be conducted: (i) in compliance with federal regulations; (ii) in compliance with good clinical practice, or GCP, an international standard meant to protect the rights and health of patients and to define the roles of clinical trial sponsors, administrators and monitors; as well as (iii) under protocols detailing the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. Each protocol involving testing on U.S. patients and subsequent protocol amendments must be submitted to FDA as part of the IND.

FDA may order the temporary, or permanent, discontinuation of a clinical trial at any time, or impose other sanctions, if it believes that the clinical trial either is not being conducted in accordance with FDA requirements or presents an unacceptable risk to the clinical trial patients. The study protocol and informed consent information for patients in clinical trials must also be submitted to an institutional review board, or IRB, for approval. An IRB may also require the clinical trial at the site to be halted, either temporarily or permanently, for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials to support NDAs for marketing approval are typically conducted in three sequential phases, but the phases may overlap. In Phase 1, the initial introduction of the drug into healthy human subjects or patients, the drug is tested to assess metabolism, pharmacokinetics, pharmacological actions, side effects associated with increasing doses, and, if possible, early evidence of effectiveness. Phase 2 usually involves trials in a limited patient population to determine the effectiveness of the drug for a particular indication, dosage tolerance and optimum dosage, and to identify common adverse effects and safety risks. If a compound demonstrates evidence of effectiveness and an acceptable safety profile in Phase 2 evaluations, Phase 3 trials are undertaken to obtain the additional information about clinical efficacy and safety in a larger number of patients, typically at geographically dispersed clinical trial sites, to permit FDA to evaluate the overall benefit-risk relationship of the drug and to provide adequate information for the labeling of the drug. In most cases FDA requires two adequate and well-controlled Phase 3 clinical trials to demonstrate the efficacy of the drug. A single Phase 3 trial with other confirmatory evidence may be sufficient in rare instances, such as where the study is a large multicenter trial demonstrating internal consistency and a statistically very persuasive finding of a clinically meaningful effect on mortality, irreversible morbidity or prevention of a disease with a potentially serious outcome and confirmation of the result in a second trial would be practically or ethically impossible.

After completion of the required clinical testing, an NDA is prepared and submitted to FDA. FDA approval of the NDA is required before marketing of the product may begin in the U.S. The NDA must include the results of all preclinical, clinical and other testing and a compilation of data relating to the product's pharmacology, chemistry, manufacture and controls. The cost of preparing and submitting an NDA is substantial. The submission of most NDAs is additionally subject to a substantial application user fee, currently exceeding $2,580,000 for fiscal year 2019, and the manufacturer and sponsor under an approved NDA are also subject to annual program fees, currently exceeding $300,000 for each prescription product. These fees are typically increased annually. Sponsors of applications for drugs granted Orphan Drug Designation are exempt from these user fees.

FDA has 60 days from its receipt of an NDA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted for filing, FDA begins an in-depth review. FDA has agreed to certain performance goals in the review of new drug applications to encourage timeliness. Most applications for standard review drug products are reviewed within ten to twelve months; most applications for priority review drugs are reviewed in six to eight months. Priority review can be applied to drugs that FDA determines offer major advances in treatment or provide a treatment where no adequate therapy exists. The review process for both standard and priority review may be extended by FDA for three additional months to consider certain late-submitted information, or information intended to clarify information already provided in the submission.

FDA may also refer applications for novel drug products, or drug products that present difficult questions of safety or efficacy, to an outside advisory committee—typically a panel that includes clinicians and other experts—for review, evaluation and a recommendation as to whether the application should be approved. FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations.

Before approving an NDA, FDA will typically inspect one or more clinical sites to assure compliance with GCP. Additionally, FDA will inspect the facility or the facilities at which the drug is manufactured. FDA will not approve the product unless compliance with current good manufacturing practices, or cGMPs, is satisfactory and the NDA contains data that provide substantial evidence that the drug is safe and effective in the indication studied.

After FDA evaluates the NDA and the manufacturing facilities, it issues either an approval letter or a complete response letter. A complete response letter generally outlines the deficiencies in the submission and may require substantial additional testing, or information, in order for FDA to reconsider the application. If, or when, those deficiencies have been addressed to FDA's satisfaction in a resubmission of the NDA, FDA will issue an approval letter. FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included.

An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. As a condition of NDA approval, FDA may require a risk evaluation and mitigation strategy, or REMS, to help ensure that the benefits of the drug outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring and the use of patient registries. The requirement for a REMS can materially affect the potential market and profitability of the drug. Moreover, product approval may require substantial post-approval testing and surveillance to monitor the drug's safety or efficacy. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

Changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new NDA or NDA supplement before the change can be implemented. An NDA supplement for a new indication typically requires clinical data similar to that in the original application, and FDA uses the same procedures and actions in reviewing NDA supplements as it does in reviewing NDAs.

Fast Track Designation and accelerated approval

FDA is required to facilitate the development, and expedite the review, of drugs that are intended for the treatment of a serious or life-threatening disease or condition for which there is no effective treatment and which demonstrate the potential to address unmet medical needs for the condition. Under the Fast Track program, the sponsor of a new drug candidate may request that FDA designate the drug candidate for a specific indication as a Fast Track drug concurrent with, or after, the filing of the IND for the drug candidate. FDA must determine if the drug candidate qualifies for Fast Track Designation within 60 days of receipt of the sponsor's request.

Under the Fast Track program and FDA's accelerated approval regulations, FDA may approve a drug for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments.

In clinical trials, a surrogate endpoint is a measurement of laboratory or clinical signs of a disease or condition that substitutes for a direct measurement of how a patient feels, functions, or survives. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. A drug candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, will allow FDA to withdraw the drug from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated regulations are subject to priority review by FDA.

If a submission is granted Fast Track Designation, the sponsor may engage in more frequent interactions with FDA, and FDA may review sections of the NDA before the application is complete. This rolling review is available if the applicant provides, and FDA approves, a schedule for the submission of the remaining information and the applicant pays applicable user fees. However, FDA's time period goal for reviewing an application does not begin until the last section of the NDA is submitted. Additionally, Fast Track Designation may be withdrawn by FDA if FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Breakthrough Therapy Designation

FDA is also required to expedite the development and review of the application for approval of drugs that are intended to treat a serious or life-threatening disease or condition where preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints. Under the Breakthrough Therapy program, the sponsor of a new drug candidate may request that FDA designate the drug candidate for a specific indication as a breakthrough therapy concurrent with, or after, the filing of the IND for the drug candidate. FDA must determine if the drug candidate qualifies for Breakthrough Therapy designation within 60 days of receipt of the sponsor's request.

Orphan Drugs

Under the Orphan Drug Act, FDA may grant Orphan Drug Designation to drugs intended to treat a rare disease or condition—generally a disease or condition that affects fewer than 200,000 individuals in the U.S. Orphan Drug designation must be requested before submitting an NDA. After FDA grants Orphan Drug Designation, the generic identity of the drug and its potential orphan use are disclosed publicly by FDA. Orphan Drug Designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. The first NDA applicant to receive FDA approval for a particular active ingredient to treat a particular disease with FDA Orphan Drug Designation is entitled to a seven-year exclusive marketing period in the U.S. for that product, for that indication. During the seven-year exclusivity period, FDA may not approve any other applications to market the same drug for the same disease, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent FDA from approving a different drug for the same disease or condition, or the same drug for a different disease or condition. Among the other benefits of Orphan Drug Designation are tax credits for certain research and an exemption from the NDA application user fee.

Rare Pediatric Disease Priority Review Voucher Program

Under the Rare Pediatric Disease Priority Review Voucher program, FDA may award a priority review voucher to the sponsor of an approved marketing application for a product that treats or prevents a rare pediatric disease. The voucher entitles the sponsor to priority review of one subsequent marketing application.

A voucher may be awarded only for an approved rare pediatric disease product application. A rare pediatric disease product application is an NDA for a product that treats or prevents a serious or life-threatening disease in which the serious or life-threatening manifestations primarily affect individuals aged from birth to 18 years;

in general, the disease must affect fewer than 200,000 such individuals in the U.S.; the NDA must be deemed eligible for priority review; the NDA must not seek approval for a different adult indication (i.e., for a different disease/condition); the product must not contain an active ingredient that has been previously approved by FDA; and the NDA must rely on clinical data derived from studies examining a pediatric population such that the approved product can be adequately labeled for the pediatric population. Before NDA approval, FDA may designate a product in development as a product for a rare pediatric disease, but such designation is not required to receive a voucher.

To receive a rare pediatric disease priority review voucher, a sponsor must notify FDA, upon submission of the NDA, of its intent to request a voucher. If FDA determines that the NDA is a rare pediatric disease product application, and if the NDA is approved, FDA will award the sponsor of the NDA a voucher upon approval of the NDA. FDA may revoke a rare pediatric disease priority review voucher if the product for which it was awarded is not marketed in the U.S. within 365 days of the product's approval.

The voucher, which is transferable to another sponsor, may be submitted with a subsequent NDA or biologics license application, or BLA, and entitles the holder to priority review of the accompanying NDA or BLA. The sponsor submitting the priority review voucher must notify FDA of is intent to submit the voucher with the NDA or BLA at least 90 days prior to submission of the NDA or BLA and must pay a priority review user fee in addition to any other required user fee ($2,457,140 in fiscal year 2019). FDA must take action on an NDA or BLA under priority review within six months of receipt of the NDA or BLA.

The Rare Pediatric Disease Priority Review Voucher program was reauthorized in the 21st Century Cures Act, allowing a product that is designated as a product for a rare pediatric disease prior to October 1, 2020 to be eligible to receive a rare pediatric disease priority review voucher upon approval of a qualifying application prior to October 1, 2022.

Post-approval requirements

Once an NDA is approved, a product will be subject to certain post-approval requirements. For instance, FDA closely regulates the post-approval marketing and promotion of drugs, including standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities and promotional activities involving the internet. Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved labeling.

Adverse event reporting and submission of periodic reports are required following FDA approval of an NDA. FDA also may require post-marketing testing, known as Phase 4 testing, risk evaluation and mitigation strategies, or REMS, and surveillance to monitor the effects of an approved product, or FDA may place conditions on an approval that could restrict the distribution or use of the product. In addition, quality control, drug manufacture, packaging and labeling procedures must continue to conform to cGMPs after approval. Drug manufacturers and certain of their subcontractors are required to register their establishments with FDA and certain state agencies. Registration with FDA subjects entities to periodic unannounced inspections by FDA, during which the Agency inspects manufacturing facilities to assess compliance with cGMPs. Accordingly, manufacturers must continue to expend time, money and effort in the areas of production and quality-control to maintain compliance with cGMPs. Regulatory authorities may withdraw product approvals or request product recalls if a company fails to comply with regulatory standards, if it encounters problems following initial marketing, or if previously unrecognized problems are subsequently discovered.

Pediatric information

Under the Pediatric Research Equity Act, or PREA, NDAs or supplements to NDAs must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and

to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. FDA may grant full or partial waivers, or deferrals, for submission of data. With certain exceptions, PREA does not apply to any drug for an indication for which orphan designation has been granted.

The Best Pharmaceuticals for Children Act, or BPCA, provides NDA holders a six-month extension of any exclusivity—patent or nonpatent—for a drug if certain conditions are met. Conditions for exclusivity include FDA's determination that information relating to the use of a new drug in the pediatric population may produce health benefits in that population, FDA making a written request for pediatric studies, and the applicant agreeing to perform, and reporting on, the requested studies within the statutory timeframe. Applications under the BPCA are treated as priority applications, with all of the benefits that designation confers.

Disclosure of clinical trial information

Sponsors of clinical trials of FDA regulated products, including drugs, are required to register and disclose certain clinical trial information. Information related to the product, patient population, phase of investigation, study sites and investigators, and other aspects of the clinical trial is then made public as part of the registration. Sponsors are also obligated to discuss the results of their clinical trials after completion. Disclosure of the results of these trials can be delayed in certain circumstances for up to two years after the date of completion of the trial. Competitors may use this publicly available information to gain knowledge regarding the progress of development programs.

The Hatch-Waxman Act

Orange Book listing

In seeking approval for a drug through an NDA, applicants are required to list with the FDA each patent whose claims cover the applicant's product. Upon approval of a drug, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential generic competitors in support of approval of an abbreviated new drug application, or ANDA. An ANDA provides for marketing of a drug product that has the same active ingredients in the same strengths and dosage form as the listed drug and has been shown through bioequivalence testing to be therapeutically equivalent to the listed drug. Other than the requirement for bioequivalence testing, ANDA applicants are not required to conduct, or submit results of, preclinical or clinical tests to prove the safety or effectiveness of their drug product. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug and can often be substituted by pharmacists under prescriptions written for the original listed drug.

The ANDA applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book. Specifically, the applicant must certify that (i) the required patent information has not been filed; (ii) the listed patent has expired; (iii) the listed patent has not expired but will expire on a particular date and approval is sought after patent expiration; or (iv) the listed patent is invalid or will not be infringed by the new product. The ANDA applicant may also elect to submit a section viii statement certifying that its proposed ANDA label does not contain (or carve out) any language regarding the patented method-of-use rather than certify to a listed method-of-use patent. If the applicant does not challenge the listed patents, the ANDA application will not be approved until all the listed patents claiming the referenced product have expired. A certification that the new product will not infringe the already approved product's listed patents, or that such patents are invalid, is called a Paragraph IV certification. If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of the receipt of a Paragraph IV certification automatically prevents

the FDA from approving the ANDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit, or a decision in the infringement case that is favorable to the ANDA applicant.

The ANDA application also will not be approved until any applicable non-patent exclusivity listed in the Orange Book for the referenced product has expired.

Exclusivity

Upon NDA approval of a new chemical entity, or NCE, which is a drug that contains no active moiety that has been approved by FDA in any other NDA, that drug receives five years of marketing exclusivity during which FDA cannot receive any ANDA seeking approval of a generic version of that drug. Certain changes to a drug, such as the addition of a new indication to the package insert, are associated with a three-year period of exclusivity during which FDA cannot approval an ANDA for a generic drug that includes the change. An ANDA may be submitted one year before NCE exclusivity expires if a Paragraph IV certification is filed. If there is no listed patent in the Orange Book, there may not be a Paragraph IV certification, and, thus, no ANDA may be filed before the expiration of the exclusivity period.

Patent term extension

After NDA approval, owners of relevant drug patents may apply for up to a five-year patent extension. The allowable patent term extension is calculated as half of the drug's testing phase (the time between IND application and NDA submission) and all of the review phase (the time between NDA submission and approval up to a maximum of five years). The time can be shortened if FDA determines that the applicant did not pursue approval with due diligence. The total patent term after the extension may not exceed 14 years from the date of product approval. Only one patent applicable to an approved drug is eligible for extension and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended and the application for the extension must be submitted prior to the expiration of the patent. For patents that might expire during the application phase, the patent owner may request an interim patent extension. An interim patent extension increases the patent term by one year and may be renewed up to four times. For each interim patent extension granted, the post-approval patent extension is reduced by one year. The director of the United States Patent and Trademark Office must determine that approval of the drug covered by the patent for which a patent extension is being sought is likely. Interim patent extensions are not available for a drug for which an NDA has not been submitted.

Foreign regulation

In addition to regulations in the United States, we will be subject to a variety of foreign regulations governing clinical trials and commercial sales and distribution of our product candidates to the extent we choose to sell any products outside of the United States. Whether or not we obtain FDA approval for a product, we must obtain approval of a product by regulatory authorities of foreign countries before we can commence clinical trials or marketing of the product in those countries. The approval process varies from country to country and the time may be longer or shorter than that required for FDA approval. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary greatly from country to country. As in the United States, post-approval regulatory requirements, such as those regarding product manufacture, marketing, or distribution would apply to any product that is approved outside the United States.

Other healthcare laws

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal laws have been applied to restrict certain general business and marketing practices in the pharmaceutical industry in recent years. These laws include anti-kickback statutes, false claims statutes and other healthcare laws and regulations.

The federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce, or in return for, purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. The Patient Protection and Affordable Care Act as amended by the Health Care and Education Reconciliation Act, collectively, the ACA, amended the intent element of the federal statute so that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to commit a violation. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand and prescribers, purchasers and formulary managers on the other. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exceptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor.

Federal civil and criminal false claims laws, including the federal civil False Claims Act, prohibit any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. This includes claims made to programs where the federal government reimburses, such as Medicaid, as well as programs where the federal government is a direct purchaser, such as when it purchases off the Federal Supply Schedule. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly inflating drug prices they report to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. Additionally, the ACA amended the federal Anti-Kickback Statute such that a violation of that statute can serve as a basis for liability under the federal False Claims Act. Most states also have statutes or regulations similar to the federal Anti-Kickback Statute and False Claims Act, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

Other federal statutes pertaining to healthcare fraud and abuse include the civil monetary penalties statute, which prohibits, among other things, the offer or payment of remuneration to a Medicaid or Medicare beneficiary that the offerer or payor knows or should know is likely to influence the beneficiary to order a receive a reimbursable item or service from a particular supplier, and the additional federal criminal statutes created by the Health Insurance Portability and Accountability Act of 1996, or HIPAA, which prohibits, among other things, knowingly and willfully executing or attempting to execute a scheme to defraud any healthcare benefit program or obtain by means of false or fraudulent pretenses, representations or promises any money or property owned by or under the control of any healthcare benefit program in connection with the delivery of or payment for healthcare benefits, items or services.

In addition, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, including the Final Omnibus Rule published on January 25, 2013, impose obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates that perform certain services involving the storage, use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information. HITECH increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney’s fees and costs associated with pursuing federal civil actions. In addition, many state laws govern the

privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect.

Further, pursuant to the ACA, the Centers for Medicare & Medicaid Services, or CMS, has issued a final rule that requires manufacturers of prescription drugs to collect and report information on certain payments or transfers of value to physicians and teaching hospitals, as well as investment interests held by physicians and their immediate family members. The first reports were due in 2014 and must be submitted on an annual basis. The reported data is made available in searchable form on a public website on an annual basis. Failure to submit required information may result in civil monetary penalties. Effective January 1, 2022, reporting on transfers of value to physician assistants, nurse practitioners or clinical nurse specialists, certified registered nurse anesthetists, and certified nurse-midwives will also be required.

In addition, several states now require prescription drug companies to report certain expenses relating to the marketing and promotion of drug products and to report gifts and payments to individual healthcare practitioners in these states. Other states prohibit various marketing-related activities, such as the provision of certain kinds of gifts or meals. Still other states require the posting of information relating to clinical studies and their outcomes. Some states require the reporting of certain pricing information, including information pertaining to and justifying price increases, or prohibit prescription drug price gouging. In addition, states such as California, Connecticut, Nevada, and Massachusetts require pharmaceutical companies to implement compliance programs and/or marketing codes. Several additional states are considering similar proposals. Certain states and local jurisdictions also require the registration of pharmaceutical sales representatives. Compliance with these laws is difficult and time consuming, and companies that do not comply with these state laws face civil penalties.

Efforts to ensure that business arrangements with third parties comply with applicable healthcare laws and regulations involve substantial costs. If a drug company's operations are found to be in violation of any such requirements, it may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, the curtailment or restructuring of its operations, loss of eligibility to obtain approvals from the FDA, exclusion from participation in government contracting, healthcare reimbursement or other federal or state government healthcare programs, including Medicare and Medicaid, integrity oversight and reporting obligations, imprisonment, and reputational harm. Although effective compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action for an alleged or suspected violation can cause a drug company to incur significant legal expenses and divert management's attention from the operation of the business, even if such action is successfully defended.

U.S. healthcare reform

In the United States there have been, and continue to be, proposals by the federal government, state governments, regulators and third-party payors to control or manage the increased costs of health care and, more generally, to reform the U.S. healthcare system. The pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives For example, in March 2010, the ACA was enacted, which intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms, substantially changed the way healthcare is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The ACA, among other things, (i) subjected therapeutic biologics to potential competition by lower-cost biosimilars by creating a licensure framework for follow-on biologic products, (ii) proscribed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs and therapeutic biologics that

are inhaled, infused, instilled, implanted or injected, (iii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, (iv) established annual nondeductible fees and taxes on manufacturers of certain branded prescription drugs and therapeutic biologics, apportioned among these entities according to their market share in certain government healthcare programs (v) established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer what are now 70% point of-sale discounts off negotiated prices of applicable brand drugs and therapeutic biologics to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs and therapeutic biologics to be covered under Medicare Part D, (vi) expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability, (vii) expanded the entities eligible for discounts under the Public Health program (viii) created a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research, and (ix) established a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

The current U.S. presidential administration and Congress have, and we expect they will continue to, seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the ACA. Since January 2017, the current U.S. presidential administration has issued two executive orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. For example, on October 12, 2017, the current U.S. presidential administration issued an executive order that expands the use of association health plans and allows anyone to purchase short-term health plans that provide temporary, limited insurance. This executive order also calls for the halt of federal payments to health insurers for cost-sharing reductions previously available to lower-income Americans to afford coverage. There is still uncertainty with respect to the impact this executive order could have on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The TCJA, among other things, included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". Additionally, on January 22, 2018, the current U.S. presidential administration signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amended the ACA, effective January 1, 2019, to increase from 50% to 70% the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". More recently, in July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. There is still uncertainty with respect to the impact the current U.S. presidential administration and the Congress may have, if any, and any changes will likely take time to unfold, and could have an impact on coverage and reimbursement for healthcare items and services covered by plans that were authorized by the

ACA. However, we cannot predict the ultimate content, timing or effect of any healthcare reform legislation or the impact of potential legislation on us.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted to reduce healthcare expenditures. United States federal government agencies also currently face potentially significant spending reductions, which may further impact healthcare expenditures. On August 2, 2011, the Budget Control Act of 2011 among other things, created measures for spending reductions by Congress. A joint select committee on deficit reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027 unless additional Congressional action is taken. Moreover, on January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. If federal spending is further reduced, anticipated budgetary shortfalls may also impact the ability of relevant agencies, such as the FDA or the National Institutes of Health to continue to function at current levels. Amounts allocated to federal grants and contracts may be reduced or eliminated. These reductions may also impact the ability of relevant agencies to timely review and approve research and development, manufacturing, and marketing activities, which may delay our ability to develop, market and sell any products we may develop.

Moreover, payment methodologies may be subject to changes in healthcare legislation and regulatory initiatives. For example, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, or MMA, changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician-administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. While the MMA only applies to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the MMA may result in a similar reduction in payments from private payors.

Recently there has been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the current U.S. presidential administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Additionally, on May 11, 2018, the current U.S. presidential administration laid out the administration's "Blueprint" to reduce the cost of prescription medications while preserving innovation and cures. While the Department of Health and Human Services, or HHS, is soliciting feedback on some of these measures, other actions may be immediately implemented by HHS under existing authority. Although a number of these, and other potential, proposals will require authorization through additional legislation to become effective, Congress and the current U.S. presidential administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product

pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA authorization under an FDA expanded access program; however, manufacturers are not obligated to provide investigational new drug products under the current federal right to try law.

Employees

As of January 31, 2019, we had 32 full-time employees and five part-time contract employees. Of these employees, 18 have an M.D. or Ph.D. None of our employees are represented by a labor union or covered by collective bargaining agreements, and we believe our relationship with our employees is good.

Facilities

We currently occupy approximately 23,000 square feet of office and laboratory space in Bedford, Massachusetts, under a lease that expires in 2021. The Bedford facility can accommodate at least 75 full-time employees. We have also signed a lease for an additional 2,485 square feet of office space in Cambridge, Massachusetts that expires in 2022, and we expect to occupy this space in the first half of 2019. The Cambridge office can accommodate at least 14 full-time employees. We believe that our facilities suffice to meet our current and near-term needs and that suitable additional space will be available as and when needed.

Legal proceedings

From time to time, we may be involved in legal proceedings arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, in the opinion of management, would have a material adverse effect on our business. Regardless of outcome, litigation can have an adverse impact on us due to defense and settlement costs, diversion of management resources, negative publicity and reputation harm, and other factors.

Management

Executive officers, key employees and directors

The following table provides information regarding our executive officers, key employees and directors as of March 15, 2019:

Name	Age	Position
Executive officers:		
Edward M. Kaye, M.D.	69	Chief Executive Officer and Director
Huw M. Nash, Ph.D.	51	Chief Operating Officer and Chief Business Officer
Stephen J. Tulipano, CPA	59	Chief Financial Officer
Barry S. Ticho, M.D., Ph.D., FACC	59	Chief Medical Officer
Gene Liau, Ph.D.	64	Executive Vice President, Head of Research and Preclinical Development
Key employees:		
Isabel Aznarez, Ph.D.	46	Vice President of Biology
Charles R. Allerson, Ph.D.	51	Vice President of Chemistry
Meena, Ph.D.	46	Vice President of Bioanalytical, DMPK and Biomarker Development
Shamim Ruff	59	Senior Vice President of Regulatory Affairs and Quality
Nancy M. Wyant	47	Vice President and Head of Clinical Operations
Non-employee directors:		
Adrian R. Krainer, Ph.D.	60	Director
Arthur A. Levin, Ph.D.	65	Director
Seth L. Harrison, M.D.	58	Director
Samuel W. Hall, Ph.D.	37	Director
Arthur O. Tzianabos, Ph.D.	55	Director

(1) Member of the Audit Committee.

(2) Member of the Compensation Committee.

(3) Member of the Nominating and Governance Committee.

Executive officers

Edward M. Kaye, M.D., has served as our Chief Executive Officer and a member of our board of directors since October 2017. Dr. Kaye joined us from Sarepta Therapeutics, Inc., a medical research and drug development company, where he served as President and Chief Executive Officer from September 2016 to July 2017, Interim Chief Executive Officer from April 2015 to September 2016 and Chief Medical Officer from June 2011 to March 2017. From 2001 to 2007, Dr. Kaye served in various positions at Genzyme Corporation, a biotechnology company, including most recently as Group Vice President of Clinical Development. Previously, Dr. Kaye served as Chief of Biochemical Genetics at Children's Hospital of Philadelphia, Chief of Neurology at St. Christopher's

Hospital for Children, and as a member of the research staff at Massachusetts General Hospital and Tufts University Medical Center. Dr. Kaye currently serves as a Neurological Consultant at the Children's Hospital of Boston. Dr. Kaye is also a member of the boards of directors of Cytokinetics, Inc., a public biopharmaceutical company, and the Massachusetts Biotechnology Council, a private non-profit life sciences industry organization. Dr. Kaye holds a B.S. in Biology/Chemistry from Loyola University and a M.D. from the Loyola University Stritch School of Medicine. We believe that Dr. Kaye is qualified to serve on our board of directors because of his extensive leadership and clinical experience in the medical and biotechnology fields.

Huw M. Nash, Ph.D., has served as our Chief Operating Officer and Chief Business Officer since October 2017, and served as our Chief Executive Officer from October 2014 to October 2017. Dr. Nash also serves as an Entrepreneur-in-Residence at Apple Tree Partners, a venture capital firm. Dr. Nash served as Vice President of Corporate Development at Aileron Therapeutics, Inc., a biopharmaceutical company, from 2005 to 2013. Prior to joining Aileron Therapeutics, Inc., Dr. Nash was a founding scientist of NeoGenesis Pharmaceuticals, Inc., a drug discovery company, where he served as Vice President of External Collaborations from 1997 to 2005 until its acquisition by Schering-Plough Corp. Dr. Nash holds a B.A. in Biochemical Sciences from Harvard College and a Ph.D. in Organic Chemistry from Harvard University.

Stephen J. Tulipano, CPA, has served as our Chief Financial Officer since March 2019. From June 2014 to July 2018, Mr. Tulipano served as Chief Financial Officer and Treasurer of Aldeyra Therapeutics, Inc., a biotechnology company. From January 2011 to June 2014, Mr. Tulipano served in an accounting and management advisory role at Three Tulips, Inc. Previously, Mr. Tulipano was Chief Financial Officer and Secretary of Javelin Pharmaceuticals, Inc. Mr. Tulipano holds a B.S. from Salem State College and an M.B.A. from Suffolk University. He is a Certified Public Accountant.

Barry S. Ticho, M.D., Ph.D., FACC, has served as our Chief Medical Officer since October 2017. From February 2016 to September 2017, Dr. Ticho served as Head of Cardiovascular and Metabolic Diseases at Moderna, Inc., a biotechnology company. From October 2013 to February 2016, Dr. Ticho served as Head of External Research and Development Innovation for the Cardiovascular and Metabolic Disease Research Unit at Pfizer, Inc., a pharmaceutical company. Previously, Dr. Ticho served as the Vice President of Clinical Development at Biogen Inc., a biopharmaceutical company. Dr. Ticho holds a B.A. in Biology from Haverford College and an M.D. and a Ph.D. in Biochemistry and Molecular Biology from the University of Chicago.

Gene Liau, *Ph.D.*, has served as our Executive Vice President, Head of Research and Preclinical Development since January 2018. From September 2015 to August 2017, Dr. Liau served as Senior Vice President and Head of Gene Therapy Research and Development at Precision Biosciences, Inc., a biotechnology company. From July 2011 to June 2015, Dr. Liau served in various roles at Pfizer, Inc., a pharmaceutical company, most recently as Executive Director and Head of External Research and Development Rare Diseases and Hematology. Dr. Liau holds a B.S. in Biology from the University of North Carolina at Chapel Hill and a Ph.D. in Biochemistry from Vanderbilt University.

Key employees

Isabel Aznarez, Ph.D., co-founded Stoke Therapeutics, Inc. and has served as our Vice President of Biology since October 2014. Prior to co-founding Stoke Therapeutics, Inc., Dr. Aznarez served as a Postdoctoral Fellow, then Research Investigator, at Cold Spring Harbor Laboratory, a biological research institution, from January 2008 to November 2015. Dr. Aznarez also serves on the board of directors of the Oligonucleotide Therapeutics Society. Dr. Aznarez holds a B.S. in Biology and Human Genetics from the University of Uruguay and a Ph.D. in Molecular Genetics from the University of Toronto.

Charles R. Allerson, Ph.D., has served as our Vice President of Chemistry since December 2017. Prior to joining us, Dr. Allerson served as Associate Director and then Director of Chemistry at Regulus Therapeutics Inc., a microRNA-focused biopharmaceutical company, from August 2010 to December 2017, and also as a Senior Scientist and Principal Scientist at Ionis Pharmaceuticals Inc., a RNA-focused biopharmaceutical company, from August 2002 to August 2010. Dr. Allerson holds a B.S. in Chemistry from Lafayette College and a Ph.D. in Chemistry from Harvard University.

Meena, Ph.D., has served as our Vice President of Bioanalytical, DMPK and Biomarker Development since April 2018. Prior to joining us, Ms. Meena served at Wave Life Sciences Ltd., a biopharmaceutical company, from March 2010 to March 2018, where most recently she was Senior Director of Bioanalytical, Pharmacology, and Biomarker Development. From July 2006 to January 2010, Ms. Meena served at Alnylam Pharmaceuticals, Inc., a biopharmaceutical company, as a scientist supporting drug discovery. Ms. Meena holds a B.S. from S.R. Govt. College for Women, B.Ed. from the D.A.V. College of Education for Women, Amritsar, an M.S. in Chemistry from Khalsa College, Amritsar, and a Ph.D. in Chemistry from the National Chemical Laboratory, Pune, India.

Shamim Ruff, has served as our Senior Vice President of Regulatory Affairs and Quality since December 2018. Prior to joining us, Ms. Ruff led the Regulatory Affairs and Quality teams at Sarepta Therapeutics, Inc., a medical research and drug development company, where she was Senior Vice President of Regulatory Affairs from December 2015 to May 2018 and Vice President of Regulatory Affairs and Quality from January 2013 to November 2015. Prior to joining Sarepta Therapeutics, Inc., Ms. Ruff served as Vice President, Head of Global Regulatory Affairs Oncology at Sanofi Genzyme, a biotechnology company, and held senior positions at Amgen Inc., Abbott Laboratories Inc., and AstraZeneca PLC, where she oversaw the development and filings of multiple successful regulatory approvals across the world. Ms. Ruff holds a B.S. in Chemistry and Biology from the University of Leicester, UK and an MSc. in Analytical Chemistry from the University of Loughborough, UK.

Nancy M. Wyant has served as our Vice President and Head of Clinical Operations since December 2018. Prior to this appointment, Ms. Wyant served as an independent clinical program management and operations consultant for us from February 2018 to December 2018. From January 2017 to January 2018, Ms. Wyant served as Vice President of Global Clinical Operations at BeiGene USA, Inc., a biopharmaceutical company. Prior to joining BeiGene USA, Inc., Ms. Wyant served as Vice President of Clinical Operations at Idera Pharmaceuticals, Inc., a biotechnology company, from May 2014 to June 2016, and as Head of Clinical Operations at Sarepta Therapeutics, Inc., a medical research and drug development company, from January 2013 to May 2014. Ms. Wyant holds a B.A. in Psychology from Hartwick College.

Non-employee directors

Adrian R. Krainer, Ph.D., co-founded Stoke Therapeutics, Inc. and has served as a member of our board of directors since June 2014. Professor Krainer is the St. Giles Professor at Cold Spring Harbor Laboratory, a biological research institution, where he has served since 1986 and where his work led directly to the invention and development of SPINRAZA. Professor Krainer holds a B.A. in Biochemistry from Columbia University and a Ph.D. in Biochemistry from Harvard University. We believe that Professor Krainer is qualified to serve on our board of directors because of his extensive experience in biopharmaceutical research and development and experience in RNA splicing and antisense therapies.

Arthur A. Levin, Ph.D., has served as a member of our board of directors since September 2015. Since January 2014, Dr. Levin has served as Executive Vice President of Research and Development at Avidity Biosciences LLC, a biotechnology company. From April 2012 to January 2014, Dr. Levin served as Executive Vice President at miRagen Therapeutics, Inc., an RNA-focused therapeutics company. Prior to joining miRagen Therapeutics, Inc., Dr. Levin served in various senior management positions at Santaris Pharma A/S Corp., a biopharmaceutical company, and Ionis Pharmaceuticals, Inc., a public, RNA-focused biopharmaceutical company. Dr. Levin holds a

B.S. in Biology from Muhlenberg College and a Ph.D. in Toxicology from the University of Rochester. We believe that Dr. Levin is qualified to serve on our board of directors because of his industry experience, including his expertise in nucleic-acid-based therapeutics.

Seth L. Harrison, *M.D.*, has served as the chairman of our board of directors since July 2015. Dr. Harrison serves as Managing Partner at Apple Tree Partners, a venture capital firm, which he founded in 1999. Prior to founding Apple Tree Partners, Dr. Harrison served as a General Partner at Oak Investment Partners, a venture capital and private equity firm, and as a Venture Partner at Sevin Rosen Funds, a technology-focused venture capital firm. Dr. Harrison currently serves as the chairman of the boards of directors of Braeburn Pharmaceuticals, Inc., a pharmaceutical company, Elstar Therapeutics, Inc., an immunotherapy company, and Limelight Bio, Inc., a gene therapy company, as well as several private companies. Dr. Harrison holds an A.B. from Princeton University and an M.D. and M.B.A. from Columbia University. We believe that Dr. Harrison is qualified to serve on our board of directors because of his experience in the life sciences industry, his experience as a venture capitalist, as well as his service on the boards of directors of numerous biopharmaceutical companies.

Samuel W. Hall, Ph.D., has served as a member of our board of directors since July 2015. Dr. Hall serves as a Partner at Apple Tree Partners, a venture capital firm. From October 2008 until joining Apple Tree Partners in April 2013, Dr. Hall served as a researcher at the University of Cambridge. Previously, Dr. Hall served on the investment team at Symphony Capital, a private equity firm dedicated to investments in biopharmaceutical development, and a member of the healthcare investment banking team at Citigroup Inc., a multinational investment bank. Dr. Hall currently serves on the boards of directors of Elstar Therapeutics, Inc., an immunotherapy company, Limelight Bio, Inc., a gene therapy company, Chinook Therapeutics, Inc., a biotechnology company, and the Burke Neurological Institute, a non-profit research institute. Dr. Hall previously served on the board of directors of Syntimmune, Inc., a biotechnology company, prior to its acquisition by Alexion Pharmaceuticals, Inc. in November 2018. Dr. Hall holds an A.B. in Molecular Biology from Princeton University and an M.Phil. and Ph.D. from the University of Cambridge. We believe that Dr. Hall is qualified to serve on our board of directors because of his experience working with and serving on the boards of directors of various life sciences companies and his experience as a venture capitalist.

Arthur O. Tzianabos, Ph.D., has served as a member of our board of directors since September 2018. Since April 2016, Dr. Tzianabos has served as President and Chief Executive Officer at Homology Medicines, Inc., a genetic medicines company. Prior to joining Homology Medicines, Inc., Dr. Tzianabos served as President and Chief Scientific Officer at OvaScience, Inc., a biotechnology company, from September 2013 to March 2016. Previously, Dr. Tzianabos served in various senior management positions at Shire Plc, a pharmaceutical company, and as a professor at Harvard Medical School. Dr. Tzianabos serves on the board of directors of Akouos, Inc., a private biotechnology company. Dr. Tzianabos holds a B.S. in Biology from Boston College and a Ph.D. in Microbiology from the University of New Hampshire. We believe that Dr. Tzianabos is qualified to serve on our board of directors because of his executive and clinical experience, as well as his extensive involvement in the biotechnology industry.

Election of officers

Our executive officers are appointed by, and serve at the discretion of, our board of directors. There are no family relationships among any of our directors or executive officers.

Board composition

Our board of directors currently consists of six members. Four of our directors are independent within the meaning of the independent director guidelines of Nasdaq. Pursuant to our current voting agreement and certificate of incorporation, Adrian R. Krainer, Seth L. Harrison, Samuel W. Hall, Arthur A. Levin, Arthur O. Tzianabos, and Edward M. Kaye have been designated to serve as members of our board of directors.

Adrian R. Krainer and Edward M. Kaye were elected by the holders of our common stock. Seth L. Harrison and Samuel W. Hall were elected by the holders of our Series A convertible preferred stock. Arthur A. Levin was elected by the holders of our common stock and the Series A convertible preferred stock, voting together as a single class on an as-converted basis. Arthur O. Tzianabos was elected by the holders of our common stock and convertible preferred stock, voting together as a single class on an as-converted basis.

The voting agreement and the provisions of our current certificate of incorporation that govern the election and designation of our directors will terminate in connection with this offering, after which no contractual obligations will concern the election of our directors. Each of our current directors will continue to serve until the election and qualification of his or her successor, or until his or her earlier death, resignation or removal.

Classified board of directors

Upon the completion of this offering, our board of directors will be divided into three staggered classes of directors. At each annual meeting of stockholders, a class of directors will be subject to re-election for a three-year term. As a result, only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Our directors will be divided among the three classes as follows:

- the Class I directors will be and and their terms will expire at the first annual meeting of stockholders held following the completion of the offering;
- the Class II directors will be and and their terms will expire at the second annual meeting of stockholders held following the completion of the offering; and
- the Class III directors will be and and their terms will expire at the third annual meeting of stockholders held following the completion of the offering.

Each director's term continues until the election and qualification of his or her successor, or his or her earlier death, resignation or removal. Our restated certificate of incorporation and restated bylaws that will be in effect upon the completion of this offering authorize only our board of directors to fill vacancies on our board of directors. Any increase or decrease in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. This classification of our board of directors may have the effect of delaying or preventing changes in control of our company. See the section entitled "Description of capital stock—Anti-takeover provisions—Restated certificate of incorporation and restated bylaw provisions."

Director independence

In connection with this offering, we intend to apply to list our common stock on Nasdaq. Under the rules of Nasdaq, independent directors must comprise a majority of a listed company's board of directors within a specified period following the completion of this offering. In addition, the rules of Nasdaq require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and governance committees be independent. Under the rules of Nasdaq, a director will only qualify as an "independent director" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors or any other board committee: (i) accept,

directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries; or (ii) be an affiliated person of the listed company or any of its subsidiaries. We intend to satisfy the audit committee independence requirements of Rule 10A-3 as of the completion of this offering. Additionally, compensation committee members must not have a relationship with us that is material to the director's ability to be independent from management in connection with the duties of a compensation committee member.

Our board of directors has undertaken a review of the independence of each director and considered whether each director has a material relationship with us that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. As a result of this review, our board of directors determined that all of our directors, except for Edward M. Kaye, M.D. and Adrian R. Krainer, Ph.D. are "independent directors" as defined under the applicable rules and regulations of the SEC and the listing requirements and rules of Nasdaq. In making these determinations, our board of directors reviewed and discussed information provided by the directors and us with regard to each director's business and personal activities and relationships as the may relate to us and our management, including the beneficial ownership of our capital stock by each non-employee director and then transactions involving them described in the section entitled "Certain relationships and related party transactions."

Committees of the board of directors

Our board of directors has an audit committee, a compensation committee and a nominating and governance committee, each of which will have the composition and responsibilities described below as of the completion of this offering. Each of the below committees has a written charter approved by our board of directors. Upon completion of this offering, copies of each charter will be posted on the investor relations section of our website. Members serve on these committees will serve until their resignation or until otherwise determined by our board of directors.

Audit committee

Our audit committee is comprised of , and , with serving as the chairman of our audit committee. The composition of our audit committee meets the requirements for independence under the current Nasdaq listing standards and SEC rules and regulations. Each member of our audit committee is financially literate. In addition, our board of directors has determined that is an "audit committee financial expert" as defined in Item 407(d)(5)(ii) of Regulation S-K promulgated under the Securities Act of 1933, as amended. This designation does not impose on him or her any duties, obligations or liabilities that are greater than are generally imposed on members of our audit committee and our board of directors. Our audit committee is directly responsible for, among other things:

- selecting and hiring our independent registered public accounting firm;
- the qualifications, independence and performance of our independent auditors;
- the preparation of the audit committee report to be included in our annual proxy statement;
- our compliance with legal and regulatory requirements;
- our accounting and financial reporting processes, including our consolidated financial statement audits and the integrity of our consolidated financial statements; and
- reviewing and approving related-person transactions.

Compensation committee

Our compensation committee is comprised of , and , with serving as the chairman of our compensation committee. Each member of our compensation committee is a non-employee

director, as defined by Rule 16b-3 promulgated under the Exchange Act and meets the requirements for independence under the current Nasdaq listing standards and SEC rules and regulations. Our compensation committee is responsible for, among other things:

- evaluating, recommending, approving and reviewing executive officer compensation arrangements, plans, policies and programs;
- evaluating and recommending non-employee director compensation arrangements for determination by our board of directors;
- administering our cash-based and equity-based compensation plans; and
- overseeing our compliance with regulatory requirements associated with the compensation of directors, officers and employees.

Nominating and governance committee

Our nominating and governance committee is comprised of , and , with serving as the chairman of our nominating and governance committee. Each member of our nominating and governance committee meets the requirements for independence under the current Nasdaq listing standards. Our nominating and governance committee is responsible for, among other things:

- identifying, considering and recommending candidates for membership on our board of directors;
- overseeing the process of evaluating the performance of our board of directors; and
- advising our board of directors on other corporate governance matters.

Compensation committee interlocks and insider participation

None of the members of our compensation committee has at any time been one of our officers or employees, and none of our executive officers has served as a member of the board of directors, or as a member of the compensation or similar committee, of any entity that has one or more executive officers who served on our board of directors or compensation committee during the year ended December 31, 2018. Prior to establishing the compensation committee, our full board of directors made decisions relating to the compensation of our officers.

Code of business conduct and ethics

Prior to the completion of this offering, our board of directors will adopt a code of business conduct and ethics that applies to all of our employees, officers and directors, including our Chief Executive Officer, Chief Financial Officer and other executive and senior officers. The full text of our code of business conduct and ethics will be posted on the investor relations section of our website. The reference to our website address in this prospectus does not include or incorporate by reference the information on or accessible through our website into this prospectus. We intend to disclose future amendments to certain provisions of our code of business conduct and ethics, or waivers of these provisions, on our website or in public filings to the extent required by the applicable rules.

Non-employee director compensation

The following table presents the total compensation earned by each of our non-employee directors in the year ended December 31, 2018. Our Chief Executive Officer, Dr. Kaye, receives no compensation for his service as a director. Other than as described below, none of our non-employee directors received any fees or

reimbursement of any expenses (other than customary expenses in connection with the attendance of meetings of our board of directors) or any equity or non-equity awards in the year ended December 31, 2018.

Name	Fees earned or paid in cash ($)	Option awards ($)(1)(2)	All other compensation ($)	Total ($)
Adrian R. Krainer, Ph.D.	—	88,734	100,000(3)	188,734
Arthur A. Levin, Ph.D.	30,000	36,536	—	66,536
Seth L. Harrison, M.D.	—	—	—	—
Samuel W. Hall, Ph.D.	—	—	—	—
Arthur O. Tzianabos, Ph.D.	7,500	79,206	—	86,706

(1) The amounts reported in this column represent the aggregate grant date fair value of the awards granted under our 2014 Plan to our directors during the year ended December 31, 2018 as computed in accordance with FASB ASC Topic 718. The assumptions used in calculating the grant date fair value of the awards reported in the Option Awards column are set forth in Note 10 to our consolidated financial statements included elsewhere in this prospectus. Note that the amounts reported in this column reflect the aggregate accounting cost for these awards, and do not necessarily correspond to the actual economic value that may be received by the director from the awards.

(2) The following table sets forth the aggregate number of shares of our common stock subject to outstanding options held by our non-employee directors as of December 31, 2018:

Director name	Number of shares underlying options held as of December 31, 2018(1)
Adrian R. Krainer, Ph.D.(2)	2,165,682
Arthur A. Levin, Ph.D.(3)	435,269
Seth L. Harrison, M.D.	—
Samuel W. Hall, Ph.D.	—
Arthur O. Tzianabos, Ph.D.(4)	614,149

(1) All of the outstanding equity awards were granted under our 2014 Plan.

(2) This amount reflects (i) options to purchase 1,483,294 shares, all of which are fully vested and (ii) options to purchase 682,388 shares, 1/48th of which vest monthly following the October 22, 2018 vesting commencement date.

(3) This amount reflects (i) options to purchase 27,605 shares, 1/48th of which vest monthly following the October 6, 2015 vesting commencement date, (ii) options to purchase 18,322 shares, 1/48th of which vest monthly following the August 1, 2016 vesting commencement date, (iii) options to purchase 165,585 shares, 1/48th of which vest monthly following the January 31, 2018 vesting commencement date and (iv) options to purchase 223,757 shares, 1/48th of which vest monthly following the October 22, 2018 vesting commencement date.

(4) This amount reflects options to purchase 614,149 shares, 1/48th of which vest monthly following the September 4, 2018 vesting commencement date.

(3) Represents fees paid to Professor Krainer pursuant to Professor Krainer's consulting agreement. See "Certain relationships and related party transactions—Consulting agreement."

Prior to this offering, we did not have a formal policy to provide any cash or equity compensation to our non-employee directors for their service on our board of directors or committees of our board of directors. In connection with this offering, our board of directors expects to approve annual non-employee director compensation, which will take effect following the completion of this offering.

Executive compensation

The following tables and accompanying narrative disclosure set forth information about the compensation earned by our named executive officers during the year ended December 31, 2018. Our named executive officers, who are our principal executive officer and the two most highly-compensated executive officers (other than our principal executive officer) serving as executive officers as of December 31, 2018, were:

- Edward M. Kaye, M.D., Chief Executive Officer and Director;
- Huw M. Nash, Ph.D., Chief Operating Officer and Chief Business Officer; and
- Barry S. Ticho, M.D., Ph.D., FACC, Chief Medical Officer.

Summary compensation table

The following table presents summary information regarding the total compensation for services rendered in all capacities that was awarded to and earned by our named executive officers during the year ended December 31, 2018:

Name and principal position	Salary($)	Non-equity incentive plan compensation ($)	Option awards ($)(1)	Total ($)
Edward M. Kaye, M.D. *Chief Executive Officer*	463,500	185,400	837,748	1,486,648
Huw M. Nash, Ph.D. *Chief Operating Officer and Chief Business Officer*	318,270	111,395	440,190	869,855
Barry S. Ticho, M.D., Ph.D., FACC *Chief Medical Officer*	360,500	140,650	239,940	741,090

(1) Represents the grant date fair value of options awarded during the year ended December 31, 2018 as computed in accordance with FASB ASC Topic 718. The assumptions used in calculating the grant date fair value of the stock options reported in the Options Award column are set forth in Note 10 to our consolidated financial statements included elsewhere in this prospectus. Note that the amounts reported in this column reflect the aggregate accounting cost for these awards, and do not necessarily correspond to the actual economic value that may be received by each named executive officer from the options.

Outstanding equity awards at 2018 fiscal year-end table

	Option awards					
Name	Grant date(1)	Vesting commencement date	Number of securities underlying unexercised options exercisable	Number of securities underlying unexercised options unexercisable	Option exercise price ($)	Option expiration date
Edward M. Kaye	4/2/2018(2)	10/17/2017	2,024,563	4,916,798	0.06	4/2/2028
	12/12/2018(3)	10/22/2018	194,134	4,465,089	0.22	12/12/2028
Huw M. Nash	2/11/2016(4)	12/1/2015	1,515,240	—	0.04	2/11/2026
	2/2/2017(3)	8/1/2016	292,591	208,994	0.04	2/2/2027
	4/2/2018(3)	1/31/2018	590,327	1,985,648	0.06	4/2/2028
	12/12/2018(3)	10/22/2018	113,400	2,608,203	0.22	12/12/2028
Barry S. Ticho	4/2/2018(2)	10/2/2017	629,864	1,529,671	0.06	4/2/2028
	12/12/2018(3)	10/22/2018	53,320	1,226,377	0.22	12/12/2028

(1) All of the outstanding equity awards were granted under the 2014 Plan. In the event of a merger or a change in control (as defined in the 2014 Plan), each outstanding option shall be assumed or an equivalent option substituted by the successor corporation or a parent or subsidiary of the successor corporation. In the event that the successor corporation in a merger or change in control refuses to assume or substitute for the option, then the optionee shall fully vest in and have the right to exercise the option as to all of the optioned stock, including shares as to which it would not otherwise be vested or exercisable.

(2) 1/4th of the option vested on the one-year anniversary of the vesting commencement date and an additional 1/48th vests monthly thereafter, subject to the executive's continued service to us.

(3) 1/48th of the option vests on each one-month anniversary of the vesting commencement date, subject to the executive's continued service to us.

(4) The option is 100% vested.

Employment agreements

We have entered into employment agreements with each of our named executive officers that provide for "at-will" employment and include each named executive officer's base salary, target discretionary annual incentive bonus opportunity, and initial option grant, or Initial Option Grant. These agreements also provide for severance benefits upon certain involuntary terminations of employment, as described below.

Pursuant to the employment agreements, upon a termination of each named executive officer's employment without "cause' or for "good reason" (each as defined in the applicable executive's employment agreement and as described below), subject to the executive's execution and non-revocation of a release of claims in favor of the company, the executive will be entitled to continued salary payments and COBRA reimbursement for 12 months following termination of employment, in the case of Drs. Nash and Kaye, and six months following termination of employment, in the case of Dr. Ticho.

Each named executive officer is also entitled to his earned but unpaid bonus upon a termination for any reason other than for cause.

Additionally, upon a termination without cause or for good reason within the 90-day period prior to the execution of a definitive agreement providing for the consummation of a "change in control" (as defined in the employment agreement) or the one-year period following a change in control, Drs. Kaye and Ticho will be entitled to full acceleration of the Initial Option Grant.

Pursuant to the employment agreements, each named executive officer is also subject to a post-termination non-competition covenant that extends for 12 months following termination of employment, in the case of Drs. Kaye and Nash, and six months following termination of employment, in the case of Dr. Ticho. In the event the named executive officer breaches his non-competition covenant, such executive will forfeit any unpaid severance benefits.

We have also entered into employee invention assignment and confidentiality agreements with each of our named executive officers, which agreements include a 12-month post-termination non-solicitation covenant.

For purposes of the employment agreements "cause" generally means:

- the executive willfully engages in conduct that is in bad faith and materially injurious to us, including but not limited to, misappropriation of trade secrets, fraud or embezzlement;
- the executive commits a material breach of any written agreement between the executive and us that causes harm to the company, which breach is not timely cured;
- the executive willfully refuses to implement or follow a directive by the board of directors, directly related to the executive's duties, which breach is not timely cured; or
- the executive engages in material misfeasance or malfeasance demonstrated by a continued pattern of material failure to perform the essential job duties associated with executive's position, which breach is not timely cured.

For purposes of the employment agreements "good reason" generally means:

- a material reduction in the executive's duties or responsibilities that is inconsistent with the executive's position;

- the requirement that the executive change his principal office to a facility that increases his commute by more than 40 miles from his commute to the location at which he was employed prior to such change, or
- a material reduction in the executive's base salary or a material reduction in the executive's employee benefits.

Equity compensation plans and other benefit plans

2014 equity incentive plan

In 2014, we adopted the 2014 Equity Incentive Plan, or the 2014 Plan, as most recently amended on October 15, 2018. The purposes of the 2014 Plan are to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentive to employees, directors and consultants and to promote the success of our business. The material terms of the 2014 Plan are summarized below:

Share reserve. As of December 31, 2018, we had 46,276,642 shares of our common stock reserved for issuance pursuant to grants under our 2014 Plan of which 11,042,826 shares remained available for grant. As of December 31, 2018, options to purchase 570,286 shares had been exercised and options to purchase 34,663,530 of shares remained outstanding, with a weighted-average exercise price of $0.12 per share. As of December 31, 2018, no shares of restricted stock, no restricted stock units and no stock appreciation rights were granted under the 2014 Plan. No new awards will be granted under the 2014 Plan after the offering.

Administration. Our 2014 Plan is administered by our board of directors or a committee appointed by our board of directors, referred to herein as the "administrator". Subject to the terms of the 2014 Plan, the administrator has the authority to, among other things, select the persons to whom awards will be granted, construe and interpret our 2014 Plan as well as to prescribe, amend and rescind rules and regulations relating to the 2014 Plan and awards granted thereunder. The administrator may modify awards subject to the terms of the 2014 Plan.

Eligibility. Pursuant to the 2014 Plan, we may grant incentive stock options only to our employees (including officers and directors who are also employees). We may grant non-statutory stock options and stock purchase rights to our employees (including officers and directors who are also employees), non-employee directors and consultants.

Options. The 2014 Plan provides for the grant of both (i) incentive stock options, which are intended to qualify for tax treatment as set forth under Section 422 of the Code, as amended, or the Code, and (ii) non-statutory stock options to purchase shares of our common stock, each at a stated exercise price. The exercise price of each option must be at least equal to the fair market value of our common stock on the date of grant (unless otherwise determined by the administrator). However, the exercise price of any incentive stock option granted to an individual who owns more than ten percent of the total combined voting power of all classes of our capital stock must be at least equal to 110% of the fair market value of our common stock on the date of grant.

The administrator will determine the vesting schedule applicable to each option. The maximum permitted term of options granted under our 2014 Plan is ten years from the date of grant, except that the maximum permitted term of incentive stock options granted to an individual who owns more than ten percent of the total combined voting power of all classes of our capital stock is five years from the date of grant.

Restricted stock, restricted stock units, stock appreciation rights. In addition, the 2014 Plan allows for the grant of restricted stock awards, restricted stock units and stock appreciation rights, with terms as generally determined by the administrator (in accordance with the 2014 Plan) and to be set forth in an award agreement. We have not granted any shares of restricted stock, any restricted stock units or any stock appreciation rights under the 2014 Plan.

Limited transferability. Unless otherwise determined by the Administrator, awards under the 2014 Plan generally may not be sold, pledged, assigned, hypothecated, transferred or disposed of in any manner other than by will, the laws of descent and distribution or qualified domestic relations orders.

Change of control. In the event that we are subject to an "acquisition" or "other combination" (as defined in the 2014 Plan and generally meaning, collectively, a merger, a sale or transfer of more than 50% of the voting power of all of our outstanding securities, or a sale of all or substantially all of the assets of ours), the 2014 Plan provides that awards will be subject to the agreement evidencing such acquisition or other combination, which agreement need not treat all awards in a similar manner. Such agreement may, without the participant's consent, provide for the continuation of outstanding awards, the assumption or substitution of awards, the acceleration of vesting of awards, the settlement of awards (whether or not vested) in cash, securities or other consideration, or the cancellation of such awards for no consideration.

Adjustments. In the event of a dividend or other distribution, recapitalization, stock split, reverse stock split, reorganization, merger, consolidation, split-up, spin-off, combination, repurchase or exchange of any of our securities, or other change in our corporate structure affecting the shares of common stock issued under the 2014 Plan, the number and class of shares that may be delivered under 2014 Plan and/or the number, class and price of shares covered by each outstanding award will (to the extent appropriate) be appropriately adjusted (subject to required action by the board), in order to prevent diminution or enlargement of benefits or potential benefits intended to be made available under the 2014 Plan or otherwise as required by applicable law.

Exchange, repricing and buyout of awards. The administrator may, with the consent of the respective participants, issue new awards in exchange for the surrender and cancelation of any or all outstanding awards. The administrator may also reduce the exercise price of options or stock appreciation rights or buy an award previously granted with payment in cash, shares or other consideration, in each case, subject to the terms of the 2014 Plan.

Amendment/termination. The Board may amend or terminate the 2014 Plan at any time and may terminate any and all outstanding options or stock appreciation rights upon a dissolution or liquidation of us, provided that certain amendments will require shareholder approval. We expect to terminate the 2014 Plan and will cease issuing awards thereunder upon the effective date of our 2019 Equity Incentive Plan (described below), which is the date immediately prior to the date of the effectiveness of the registration statement of which this prospectus forms a part. Any outstanding awards granted under the 2014 Plan will remain outstanding following the offering, subject to the terms of our 2014 Plan and applicable award agreements, until such awards are exercised or until they terminate or expire by their terms.

2019 equity incentive plan

We intend to adopt our 2019 Equity Incentive Plan, or the 2019 Plan, that will become effective on the date immediately prior to the date of the effectiveness of the registration of which this prospectus forms a part and will serve as the successor to our 2014 Plan. Our 2019 Plan authorizes the award of stock options, restricted stock awards, or RSAs, stock appreciation rights, or SARs, restricted stock units, or RSUs, performance awards and stock bonus awards. We have initially reserved shares of our common stock, plus any reserved shares not issued or subject to outstanding grants under the 2014 Plan on the effective date of the 2019 Plan, for issuance pursuant to awards granted under our 2019 Plan. The number of shares reserved for issuance under our 2019 Plan will increase automatically on January 1 of each of 2020 through 2029 by the number of shares equal to % of the aggregate number of outstanding shares of our common stock as of the immediately preceding December 31, or a lesser number as may be determined by our board of directors.

In addition, the following shares will again be available for issuance pursuant to awards granted under our 2019 Plan:

- shares subject to options or SARs granted under our 2019 Plan that cease to be subject to the option or SAR for any reason other than exercise of the option or SAR;
- shares subject to awards granted under our 2019 Plan that are subsequently forfeited or repurchased by us at the original issue price;
- shares subject to awards granted under our 2019 Plan that otherwise terminate without such shares being issued;
- shares subject to awards granted under our 2019 Plan that are surrendered, cancelled or exchanged for cash or a different award (or combination thereof);
- shares issuable upon the exercise of options or subject to other awards granted under our 2014 Plan that cease to be subject to such options or other awards, by forfeiture or otherwise, after the termination of the 2014 Plan;
- shares subject to awards granted under our 2014 Plan that are forfeited or repurchased by us at the original price after the termination of the 2014 Plan; and
- shares subject to awards under our 2014 Plan or our 2019 Plan that are used to pay the exercise price of an option or withheld to satisfy the tax withholding obligations related to any award.

Administration. Our 2019 Plan is expected to be administered by our compensation committee, or by our board of directors acting in place of our compensation committee. Subject to the terms and conditions of the 2019 Plan, the compensation committee will have the authority, among other things, to select the persons to whom awards may be granted, construe and interpret our 2019 Plan as well as to determine the terms of such awards and prescribe, amend and rescind the rules and regulations relating to the plan or any award granted thereunder. The 2019 Plan provides that the board or compensation committee may delegate its authority, including the authority to grant awards, to one or more executive officers to the extent permitted by applicable law, provided that awards granted to non-employee directors may only be determined by our board of directors.

Eligibility. Our 2019 Plan provides for the grant of awards to our employees, directors, consultants, independent contractors and advisors. No non-employee director may receive awards under our 2019 Plan that exceed $ in a calendar year or $ in the calendar year of his or her initial services as a non-employee director with us.

Options. The 2019 Plan provides for the grant of both incentive stock options intended to qualify under Section 422 of the Code, and non-statutory stock options to purchase shares of our common stock at a stated exercise price. Incentive stock options may only be granted to employees, including officers and directors who are also employees. The exercise price of stock options granted under the 2019 Plan must be at least equal to the fair market value of our common stock on the date of grant. Incentive stock options granted to an individual who holds, directly or by attribution, more than ten percent of the total combined voting power of all classes of our capital stock must have an exercise price of at least 110% the fair market value of our common stock on the date of grant. Subject to stock splits, dividends, recapitalizations or similar events, no more than shares may be issued pursuant to the exercise of incentive stock options granted under the 2019 Plan.

Options may vest based on service or achievement of performance conditions. Our compensation committee may provide for options to be exercised only as they vest or to be immediately exercisable, with any shares

issued on exercise being subject to our right of repurchase that lapses as the shares vest. The maximum term of options granted under our 2019 Plan is ten years from the date of grant, except that the maximum permitted term of incentive stock options granted to an individual who holds, directly or by attribution, more than ten percent of the total combined voting power of all classes of our capital stock is five years from the date of grant.

Restricted stock awards. An RSA is an offer by us to sell shares of our common stock subject to restrictions, which may lapse based on the satisfaction of service or achievement of performance conditions. The price, if any, of an RSA will be determined by the compensation committee. Holders of RSAs, unlike holders of options, will have the right to vote and any dividends or stock distributions paid pursuant to RSAs will be accrued and paid when the restrictions on such shares lapse. Unless otherwise determined by the compensation committee at the time of award, vesting will cease on the date the participant no longer provides services to us and unvested shares may be forfeited to or repurchased by us.

Stock appreciation rights. A SAR provides for a payment, in cash or shares of our common stock (up to a specified maximum of shares, if determined by our compensation committee), to the holder based upon the difference between the fair market value of our common stock on the date of exercise and a predetermined exercise price, multiplied by the number of shares. The exercise price of a SAR must be at least the fair market value of a share of our common stock on the date of grant. SARs may vest based on service or achievement of performance conditions, and may not have a term that is longer than ten years from the date of grant.

Restricted stock units. RSUs represent the right to receive shares of our common stock at a specified date in the future, and may be subject to vesting based on service or achievement of performance conditions. Payment of earned RSUs will be made as soon as practicable on a date determined at the time of grant, and may be settled in cash, shares of our common stock or a combination of both. No RSU may have a term that is longer than ten years from the date of grant.

Performance awards. Performance awards granted to pursuant to the 2019 Plan may be in the form of a cash bonus, or an award of performance shares or performance units denominated in shares of our common stock that may be settled in cash, property or by issuance of those shares subject to the satisfaction or achievement of specified performance conditions.

Stock bonus awards. A stock bonus award provides for payment in the form of cash, shares of our common stock or a combination thereof, based on the fair market value of shares subject to such award as determined by our compensation committee. The awards may be granted as consideration for services already rendered, or at the discretion of the compensation committee, may be subject to vesting restrictions based on continued service or performance conditions.

Dividend equivalents rights. Dividend equivalent rights may be granted at the discretion of our compensation committee, and represent the right to receive the value of dividends, if any, paid by us in respect of the number of shares of our common stock underlying an award. Dividend equivalent rights will be subject to the same vesting or performance conditions as the underlying award and will be paid only at such time as the underlying award has become fully vested. Dividend equivalent rights may be settled in cash, shares or other property, or a combination of thereof as determined by the compensation committee.

Change of control. Our 2019 Plan provides that, in the event of a change of control (as defined in the 2019 Plan), outstanding awards under our 2019 Plan shall be subject to the agreement evidencing the change of control, which need not treat all outstanding awards in an identical manner, and may include one or more of the following: (i) the continuation of the outstanding awards; (ii) the assumption of the outstanding awards by the surviving corporation or its parent; (iii) the substitution by the surviving corporation or its parent of new options or equity awards for the outstanding awards; (iv) the full or partial acceleration of exercisability or

vesting or lapse of Company's right to repurchase or forfeiture rights and accelerated expiration of the award; or (v) the settlement of the full value of the outstanding awards (whether or not then vested or exercisable) in cash, cash equivalents, or securities of the successor entity with a fair market value equal to the required amount, as determined in accordance with the 2019 Plan and which payments may be deferred until the date or dates the award would have become exercisable or vested. However, in the event a successor or acquiring corporation refuses to assume, substitute or settle outstanding awards, all such awards will become fully vested and exercisable immediately prior to the consummation of the change in control. In addition, upon a change in control the vesting of all awards granted to our non-employee directors will accelerate and such awards will become exercisable (to the extent applicable) in full prior to the consummation of the change of control at such times and on such conditions as the committee determines.

Adjustment. In the event of a change in the number of outstanding shares of our common stock without consideration by reason of a stock dividend, extraordinary dividend or distribution, recapitalization, stock split, reverse stock split, subdivision, combination, consolidation reclassification, spin-off or similar change in our capital structure, appropriate proportional adjustments will be made to the number of shares reserved for issuance under our 2019 Plan; the exercise prices, number and class of shares subject to outstanding options or SARs; the number and class of shares subject to other outstanding awards; and any applicable maximum award limits with respect to incentive stock options.

Clawback; transferability. All awards will be subject to clawback or recoupment pursuant to any compensation clawback or recoupment policy adopted by our board of directors or required by law during the term of service of the award holder, to the extent set forth in such policy or applicable agreement. Except in limited circumstances, awards granted under our 2019 Plan may generally not be transferred in any manner prior to vesting other than by will or by the laws of descent and distribution.

Amendment and termination. Our board of directors may amend our 2019 Plan at any time, subject to stockholder approval as may be required. Our 2019 Plan will terminate ten years from the date our board of directors adopts the plan, unless it is terminated earlier by our board of directors. No termination or amendment of the 2019 Plan may adversely affect any then-outstanding award without the consent of the affected participant, except as is necessary to comply with applicable laws.

401(k) plan

We sponsor a retirement savings plan, or 401(k) plan, that is intended to qualify for favorable tax treatment under Section 401(a) of the Code, and contains a cash or deferred feature that is intended to meet the requirements of Section 401(k) of the Code. U.S. employees who have attained at least 21 years of age are generally eligible to participate in the 401(k) plan following two months of service, subject to certain criteria. Participants may make pre-tax and certain after-tax (Roth) salary deferral contributions to the plan from their eligible earnings up to the statutorily prescribed annual limit under the Code. Participants who are 50 years of age or older may contribute additional amounts based on the statutory limits for catch-up contributions. Participant contributions are held in trust as required by law. No minimum benefit is provided under the plan. An employee's interest in his or her salary deferral contributions is 100% vested when contributed. We have the ability to make discretionary matching and profit share contributions under the plan but have not done so to date. Any such discretionary employer contributions would vest in equal, annual installments over 4 years and may be subject to other eligibility requirements.

Other benefits

Our named executive officers are eligible to participate in our employee benefit plans on the same basis as our other employees, including our health and welfare plans.

Limitations on liability and indemnification matters

Our restated certificate of incorporation that will become effective in connection with the completion of this offering contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by the Delaware General Corporation Law, or DGCL. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors, except liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL; or
- any transaction from which the director derived an improper personal benefit.

Our restated certificate of incorporation and our restated bylaws that will become effective in connection with the completion of this offering require us to indemnify our directors and officers to the maximum extent not prohibited by the DGCL and allow us to indemnify other employees and agents as set forth in the DGCL.

We have entered, and intend to continue to enter, into separate indemnification agreements with our directors, officers and certain of our key employees, in addition to the indemnification provided for in our restated certificate of incorporation and restated bylaws. These agreements, among other things, require us to indemnify our directors, officers and key employees for certain expenses, including attorneys' fees, judgments, penalties, fines and settlement amounts actually incurred by these individuals in any action or proceeding arising out of their service to us or any of our subsidiaries or any other company or enterprise to which these individuals provide services at our request. Subject to certain limitations, our indemnification agreements also require us to advance expenses incurred by our directors, officers and key employees for the defense of any action for which indemnification is required or permitted.

We believe that these indemnification provisions and agreements are necessary to attract and retain qualified directors, officers and key employees. We also maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our restated certificate of incorporation and restated bylaws may discourage stockholders from bringing a lawsuit against our directors and officers for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Further, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage awards against directors and officers as required by these indemnification provisions.

At present, there is no pending litigation or proceeding involving any of our directors or executive officers as to which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, or Securities Act, may be permitted to directors, executive officers or persons controlling us, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Certain relationships and related party transactions

In addition to the compensation arrangements, including any employment, termination of employment and change in control arrangements, with our directors and executive officers, including those discussed in the sections entitled “Management” and “Executive compensation,” the following is a description of each transaction since January 1, 2016 and each currently proposed transaction in which:

- we have been or are to be a participant;
- the amounts involved exceeded or will exceed $120,000; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or an affiliate or immediate family member of the foregoing persons, had or will have a direct or indirect material interest.

Other than as described below, there have not been, nor are there any currently proposed, transactions or series of similar transactions to which we have been or will be a party other than compensation arrangements, which are described where required under the section entitled “Executive compensation.”

Equity financings

Series A

In July 15, 2015, we sold an aggregate of 24,456,520 shares of our Series A convertible preferred stock at a purchase price of $0.2392 per share for an aggregate purchase price of approximately $5.8 million. In July 2016, we sold an aggregate of 12,541,806 additional shares of our Series A convertible preferred stock at a purchase price of $0.2392 per share for an aggregate purchase price of approximately $3.0 million. In February 2017, we sold an aggregate of 12,541,806 additional shares of our Series A convertible preferred stock at a purchase price of $0.2392 per share for an aggregate purchase price of approximately $3.0 million.

Simple Agreement for Future Equity

In October 2017, we issued, to Apple Tree Partners IV, L.P., rights to purchase certain shares of our capital stock for an aggregate purchase price of $3,000,000, or Purchase Amount, pursuant to a Simple Agreement for Future Equity, or SAFE. The entire Purchase Amount and all other obligations under the SAFE converted into 7,839,038 shares of our Series A-2 convertible preferred stock, which is described below.

Series A-2

In January 2018, we sold an aggregate of 40,501,698 shares of our Series A-2 convertible preferred stock at a purchase price of $0.3827 per share for an aggregate purchase price of approximately $15.5 million. In September 2018, we sold an aggregate of 35,275,672 additional shares of our Series A-2 convertible preferred stock at a purchase price of $0.3827 per share for an aggregate purchase price of approximately $13.5 million.

Series B

In October 2018, we sold an aggregate of 100,267,372 shares of our Series B convertible preferred stock at a purchase price of $0.8976 per share for an aggregate purchase price of approximately $90 million.

The following table summarizes the Series A, Series A-2 and Series B convertible preferred stock purchased by members of our board of directors or their affiliates and holders of more than five percent of our outstanding capital stock:

Name of stockholder	Series	Shares of convertible preferred stock	Total purchase price ($)
Apple Tree Partners, IV, L.P.(1)	A	49,540,132	11,849,999.57
Apple Tree Partners, IV, L.P.(1)	A-2	75,777,370	28,999,999.50
Apple Tree Partners, IV, L.P.(1)	B	27,852,049	24,999,999.18
RTW Master Fund(2)	B	24,173,938	21,698,526.75
RTW Innovation Master Fund, Ltd.(2)	B	3,678,111	3,301,472.43

1. Apple Tree Partners, IV, L.P., or ATP IV, holds more than five percent of our outstanding capital stock. Seth L. Harrison, M.D., a member of our board of directors, is the founder and managing partner of ATP IV and Samuel W. Hall, Ph.D., a member of our board of directors, is a principal at ATP IV.

2. Entities associated with RTW Investments, or RTW, hold more than 5% of our outstanding capital stock.

Amended and restated investors' rights agreement

We have entered into a second amended and restated investors' rights agreement, or the IRA, dated October 22, 2018, with certain holders of our convertible preferred stock, including entities with which certain of our directors are affiliated. Additionally, the IRA provides for a participation right to affiliates of RTW Master Fund and Apple Tree Partners IV, L.P., holders of more than five percent of our common stock, to purchase a specified percentage of shares of common stock in this offering at the public offering price. The IRA further provides that, under certain circumstances in which such entities are unable to participate in this offering, we are required to offer them shares of our common stock through a separate private placement to be concurrent with this offering. Under the IRA, these stockholders are also entitled to rights with respect to the registration of their shares following this offering under the Securities Act of 1933, as amended. For a description of these registration rights, see the section entitled "Description of capital stock—Registration rights."

Equity grants to executive officers and directors

We have granted stock options to our executive officers and certain directors, as more fully described in the sections entitled "Executive compensation" and "Management—Non-employee director compensation," respectively.

Director and executive officer compensation

Please see the sections entitled "Management—Non-employee director compensation" and "Executive compensation" for information regarding the compensation of our directors and executive officers.

Employment agreements

We have entered into employment agreements with our executive officers. For more information regarding these agreements, see the section entitled "Executive compensation—Employment agreements."

Consulting agreement

In October 2014, we entered into a consulting agreement with Adrian R. Krainer, who is also an employee of Cold Spring Harbor Laboratory, to provide consulting services related to scientific research related to the development of antisense-based drugs, therapies, diagnostic and research tools, products, services and intellectual property. We made payments of $100,000 during each of the years ended December 31, 2018, 2017 and 2016 for such consulting services. The initial term of this agreement was five years and may be extended by the mutual consent of us and Professor Krainer.

Indemnification agreements

In connection with this offering, we intend to enter into new indemnification agreements with each of our directors and executive officers. The indemnification agreements, our restated certificate of incorporation and our restated bylaws will require us to indemnify our directors to the fullest extent not prohibited by Delaware law. Subject to certain limitations, our restated bylaws also require us to advance expenses incurred by our directors and officers. For more information regarding these agreements, see the section entitled “Executive compensation—Limitations on liability and indemnification matters” for information on our indemnification arrangements with our directors and executive officers.

Policies and procedures for related party transactions

In connection with this offering, we intend to adopt a written related person transactions policy that provides that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of our common stock, and any members of the immediate family of and any entity affiliated with any of the foregoing persons, are not permitted to enter into a material related person transaction with us without the review and approval of our audit committee, or a committee composed solely of independent directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. We expect the policy to provide that any request for us to enter into a transaction with an executive officer, director, nominee for election as a director, beneficial owner of more than 5% of our common stock or with any of their immediate family members or affiliates in which the amount involved exceeds $120,000 will be presented to our audit committee (or the committee composed solely of independent directors, if applicable) for review, consideration and approval. In approving or rejecting any such proposal, we expect that our audit committee (or the committee composed solely of independent directors, if applicable) will consider the relevant facts and circumstances available and deemed relevant to the audit committee (or the committee composed solely of independent directors, if applicable), including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person’s interest in the transaction.

Principal stockholders

The following table and accompanying footnotes set forth certain information with respect to the beneficial ownership of our common stock at March 15, 2019, and as adjusted to reflect the shares of common stock to be issued and sold in this offering, for:

- each of our directors;
- each of our named executive officers;
- all of our current directors and executive officers as a group; and
- each person, or group of affiliated persons, who beneficially owned more than five percent of our outstanding shares of common stock.

We have determined beneficial ownership in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares of common stock that they beneficially owned, subject to applicable community property laws.

Beneficial ownership prior to this offering is based on 234,413,489 shares of common stock outstanding as of March 15, 2019, assuming the automatic conversion of all outstanding shares of our convertible preferred stock into common stock in connection with this offering. Beneficial ownership after this offering is based on shares of common stock outstanding, assuming (i) the automatic conversion of all outstanding shares of our convertible preferred stock into common stock as described above and (ii) the issuance of shares of common stock in this offering. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed to be outstanding all shares of common stock subject to options held by that person or entity that are currently exercisable or that will become exercisable within 60 days of March 15, 2019. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Stoke Therapeutics, Inc., 45 Wiggins Avenue, Bedford, Massachusetts, 01730.

	Beneficial ownership prior to this offering		Beneficial ownership after this offering	
Name of beneficial owner	**Number**	**Percent**	**Number**	**Percent**
Directors and named executive officers:				
Edward M. Kaye, M.D.(1)	3,185,412	1.3%		%
Huw M. Nash, Ph.D.(2)	3,005,271	1.3		
Barry S. Ticho, M.D., Ph.D., FACC(3)	1,014,777	*		
Seth L. Harrison, M.D.(4)	153,169,551	65.3		
Samuel W. Hall, Ph.D.	—	—		
Adrian R. Krainer, Ph.D.(5)	4,068,592	1.7		
Arthur A. Levin, Ph.D.(6)	283,022	*		
Arthur O. Tzianabos, Ph.D.(7)	102,358	*		
All executive officers and directors as a group (10 persons)(8)	165,425,280	68.2		
Other 5% stockholders:				
Apple Tree Partners IV, L.P.(4)	153,169,551	65.3		
Entities affiliated with RTW Investments, L.P.(9)	27,852,049	11.9		

* Represents beneficial ownership of less than one percent.

(1) Represents 3,185,412 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(2) Represents 3,005,271 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(3) Represents 1,014,777 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(4) Represents 153,169,551 shares of common stock held by Apple Tree Partners IV, L.P., or ATP IV. ATP III GP, Ltd., or ATP III, is the sole general partner of ATP IV. Seth L. Harrison, M.D., a member of our board of directors, is the sole director of ATP III and may be deemed to have sole voting and dispositive power over the shares held by ATP IV. The address of ATP IV is 230 Park Avenue, Suite 2800, New York, New York 10169.

(5) Represents (i) 4,025,943 shares of common stock and (ii) 42,649 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(6) Represents (i) 178,880 shares of common stock held by Arthur A. Levin, Trustee, Butler-Levin Revocable Trust and (ii) 104,142 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(7) Represents 102,358 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(8) Represents (i) 157,374,374 shares of common stock and (ii) 8,050,906 shares underlying options to purchase common stock that are exercisable within 60 days of March 15, 2019.

(9) Represents (i) 24,173,938 shares of common stock held by RTW Master Fund, Ltd., or RTW Master Fund, and (ii) 3,678,111 shares of common stock held by RTW Innovation Master Fund, Ltd., or RTW Innovation Fund. RTW Investments, LP, or RTW Investments, is the manager of RTW Master Fund and RTW Innovation Fund. Roderick Wong, M.D. is the managing partner and chief investment officer of RTW Investments and has sole voting and investment control over the shares held by each of RTW Master Fund and RTW Innovation Fund. The address of RTW Investments is 412 West 15th Street, Floor 9, New York, New York 10011.

Description of capital stock

The following description summarizes the most important terms of our capital stock, as they will be in effect following this offering. Because it is only a summary, it does not contain all the information that may be important to you. We expect to adopt a restated certificate of incorporation and restated bylaws that will become effective upon the completion of this offering, and this description summarizes provisions that are expected to be included in these documents. For a complete description, you should refer to our restated certificate of incorporation and restated bylaws, which are included as exhibits to the registration statement of which this prospectus forms a part, and to the applicable provisions of Delaware law.

Upon the completion of this offering, our authorized capital stock will consist of shares of common stock, $0.0001 par value per share, and shares of undesignated preferred stock, $0.0001 par value per share.

Pursuant to the provisions of our current certificate of incorporation all of the outstanding convertible preferred stock will automatically convert into common stock in connection with the completion of this offering. Our Series A convertible preferred stock will convert at a ratio of 1:1, our Series A-2 convertible preferred stock will convert at a ratio of 1:1, and our Series B convertible preferred stock will convert at a ratio of 1:1. Assuming the effectiveness of this conversion as of December 31, 2018, there were shares of our common stock issued, held by approximately stockholders of record, and no shares of our convertible preferred stock outstanding. Our board of directors is authorized, without stockholder approval, to issue additional shares of our capital stock.

Common stock

Dividend rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock are entitled to receive dividends out of funds legally available if our board of directors, in its discretion, determines to issue dividends and then only at the times and in the amounts that our board of directors may determine. See the section entitled “Dividend policy.”

Voting rights

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders. We have not provided for cumulative voting for the election of directors in our restated certificate of incorporation, which means that holders of a majority of the shares of our common stock will be able to elect all of our directors. Our restated certificate of incorporation will establish a classified board of directors, to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms.

No preemptive or similar rights

Our common stock is not entitled to preemptive rights, and is not subject to conversion, redemption or sinking fund provisions.

Right to receive liquidation distributions

Upon our liquidation, dissolution or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Preferred stock

Immediately prior to the completion of this offering, each outstanding share of preferred stock will be converted into common stock at a ratio of 1:1.

Following the completion of this offering, our board of directors will be authorized, subject to limitations prescribed by Delaware law, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series and to fix the designation, powers, preferences and rights of the shares of each series and any of their qualifications, limitations or restrictions, in each case without further vote or action by our stockholders. Our board of directors will also be able to increase or decrease the number of shares of any series of preferred stock, but not below the number of shares of that series then outstanding, without any further vote or action by our stockholders. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and might adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. We have no current plan to issue any shares of preferred stock.

Stock options

As of December 31, 2018, we had outstanding options to purchase an aggregate 34,663,530 shares of our common stock, with a weighted-average exercise price of $0.12.

Registration rights

Pursuant to the terms of our amended and restated investors' rights agreement, immediately following this offering, the holders of 225,584,874 shares of our common stock will be entitled to rights with respect to the registration of these shares under the Securities Act of 1933, as amended, or the Securities Act, as described below. We refer to these shares collectively as registrable securities.

Form S-1 registration rights

Beginning 180 days after the completion of this offering, the holders of at least a majority of the then-outstanding registrable securities may make a request to us for the registration under the Securities Act of registrable securities if the aggregate price to the public of the shares offered is at least $10.0 million. Within ten (10) days following such request, we are obligated to provide notice of such request to all stockholders, other than the initiating holders, to file a registration statement under the Securities Act covering all registrable securities that the initiating holders requested to be registered and any additional registrable securities requested to be included in such registration by any other holders. We are only required to file two registration statements that are declared effective upon exercise of these demand registration rights. We may postpone taking action with respect to such filing not more than once during any 12-month period for a total period of not more than 120 days, if after receiving a request for registration, we furnish to the holders requesting such registration a certificate signed by our Chief Executive Officer stating that, in the good faith judgment of our board of directors, it would be materially detrimental to us and our stockholders for such registration statement to be effected at such time.

The underwriters of any underwritten offering will have the right to limit the number of shares registered by these holders if they determine that marketing factors require limitation, in which case the number of shares to be registered will be apportioned, in proportion (as nearly as practicable), to the number of registrable securities owned by each holder or in such other proportion as shall mutually be agreed to by all such selling

Holders. However, the number of shares to be registered by these holders cannot be reduced unless all other securities are first entirely excluded from the underwriting.

Form S-3 registration rights

Any holder or group of holders of at least 20% of then-outstanding registrable securities can request that we register all or part of their shares on Form S-3 if we are eligible to file a registration statement on Form S-3 and if the aggregate price to the public of the shares offered is at least $1.0 million. The stockholders may only require us to effect two registration statements on Form S-3 in a 12-month period. We may postpone taking action with respect to such filing not more than once during any 12-month period for a total period of not more than 120 days, if after receiving a request for registration, we furnish to the holders requesting such registration a certificate signed by our Chief Executive Officer stating that, in the good faith judgment of our board of directors, it would be materially detrimental to us and our stockholders for such registration statement to be effected at such time.

The underwriters of any underwritten offering will have the right to limit the number of shares registered by these holders if they determine that marketing factors require limitation, in which case the number of shares to be registered will be apportioned, in proportion (as nearly as practicable), to the number of registrable securities owned by each holder or in such other proportion as shall mutually be agreed to by all such selling Holders. However, the number of shares to be registered by these holders cannot be reduced unless all other securities are first entirely excluded from the underwriting.

Piggyback registration rights

If we register any of our securities for public sale, holders of then-outstanding registrable securities or their permitted transferees will have the right to include their registrable securities in the registration statement. However, this right does not apply to a registration relating to employee benefit plans, a registration relating to a corporate reorganization, a registration on a form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of registrable securities or a registration in which the only common stock being registered is common stock issuable upon conversion of debt securities that are being registered.

The underwriters of any underwritten offering will have the right to limit the number of shares registered by these holders if they determine that marketing factors require limitation, in which case the number of shares to be registered will be apportioned to the selling holders, in proportion (as nearly as practicable), to the number of registrable securities owned by each selling holder or in such other proportion as shall mutually be agreed to by all such selling Holders. However, the number of shares to be registered by these holders cannot be reduced (i) unless all other securities (other than securities to be sold by us) are first entirely excluded from the offering, (ii) below 25% of the total number of securities included in such offering, unless such offering is the initial public offering, in which case the selling holders may be excluded further if the underwriters make the determination for a limitation and no other stockholder’s securities are included in such offering.

Expenses of registration rights

We generally will pay all expenses, other than underwriting discounts and commissions.

Expiration of registration rights

The registration rights described above will expire, with respect to any particular holder of these rights, on the earlier of the fifth anniversary of this offering or with respect to each holder, such time following this offering as all registrable securities of such holder may be sold within a three-month period pursuant to Rule 144.

Anti-takeover provisions

The provisions of Delaware General Corporation Law, or DGCL, our restated certificate of incorporation and our restated bylaws, as we expect they will be in effect upon the completion of this offering, could have the effect of delaying, deferring or discouraging another person from acquiring control of our company. These provisions, which are summarized below, may have the effect of discouraging takeover bids. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our board of directors. We believe that the benefits of increased protection of our potential ability to negotiate with an unfriendly or unsolicited acquirer outweigh the disadvantages of discouraging a proposal to acquire us because negotiation of these proposals could result in an improvement of their terms.

Delaware law

We are subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the date on which the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, (i) shares owned by persons who are directors and also officers and (ii) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to the date of the transaction, the business combination is approved by the board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66.67% of the outstanding voting stock that is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction or series of transactions together resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Restated certificate of incorporation and restated bylaw provisions

Our restated certificate of incorporation and our restated bylaws, as we expect they will be in effect upon the completion of this offering, include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our company, including the following:

- *Board of directors vacancies.* Our restated certificate of incorporation and restated bylaws will authorize only our board of directors to fill vacant directorships, including newly created seats. In addition, the number of directors constituting our board of directors is permitted to be set only by a resolution adopted by a majority vote of our entire board of directors. These provisions would prevent a stockholder from increasing the size of our board of directors and then gaining control of our board of directors by filling the resulting

vacancies with its own nominees. This makes it more difficult to change the composition of our board of directors but promotes continuity of management.

- *Classified board.* Our restated certificate of incorporation and restated bylaws will provide that our board of directors is classified into three classes of directors, each with staggered three-year terms. A third party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board of directors. See the section entitled “Management—Board composition.”
- *Stockholder action; special meetings of stockholders.* Our restated certificate of incorporation will provide that our stockholders may not take action by written consent, but may only take action at annual or special meetings of our stockholders. As a result, a holder controlling a majority of our capital stock would not be able to amend our restated bylaws or remove directors without holding a meeting of our stockholders called in accordance with our restated bylaws. Further, our restated bylaws will provide that special meetings of our stockholders may be called only by a majority of our board of directors, the chairman of our board of directors, our Chief Executive Officer or our President, thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take any action, including the removal of directors.
- *Advance notice requirements for stockholder proposals and director nominations.* Our restated bylaws will provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders. Our restated bylaws also will specify certain requirements regarding the form and content of a stockholder’s notice. These provisions might preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. We expect that these provisions might also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer’s own slate of directors or otherwise attempting to obtain control of our company.
- *No cumulative voting.* The DGCL provides that stockholders are not entitled to the right to cumulate votes in the election of directors unless a corporation’s certificate of incorporation provides otherwise. Our restated certificate of incorporation and restated bylaws will not provide for cumulative voting.
- *Directors removed only for cause.* Our restated certificate of incorporation will provide that stockholders may remove directors only for cause and only by the affirmative vote of the holders of at least two-thirds of our outstanding common stock.
- *Amendment of charter provisions.* Any amendment of the above expected provisions in our restated certificate of incorporation would require approval by holders of at least two-thirds of our outstanding common stock.
- *Issuance of undesignated preferred stock.* Our board of directors has the authority, without further action by the stockholders, to issue up to shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by our board of directors. The existence of authorized but unissued shares of preferred stock would enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by merger, tender offer, proxy contest or other means.
- *Choice of forum.* Our restated certificate of incorporation will provide that, to the fullest extent permitted by law, the Court of Chancery of the State of Delaware will be the exclusive forum for any derivative action or

proceeding brought on our behalf; any action asserting a breach of fiduciary duty; any action asserting a claim against us arising pursuant to the DGCL, our restated certificate of incorporation or our restated bylaws; or any action asserting a claim against us that is governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be inapplicable or unenforceable.

Transfer agent and registrar

Upon the completion of this offering, the transfer agent and registrar for our common stock will be . The transfer agent's address is , and its telephone number is .

Nasdaq Global Market listing

We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "STOK."

Shares eligible for future sale

Prior to this offering, there has been no public market for our common stock, and we cannot predict the effect, if any, that market sales of shares of our common stock or the availability of shares of our common stock for sale will have on the market price of our common stock prevailing from time to time. Nevertheless, sales of substantial amounts of our common stock, including shares issued upon exercise of outstanding options, in the public market following this offering could adversely affect market prices prevailing from time to time and could impair our ability to raise capital through the sale of our equity securities.

Upon the completion of this offering, we will have a total of shares of our common stock outstanding, assuming (i) the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of shares of our common stock and (ii) the issuance of shares of common stock in this offering. Of these outstanding shares, all of the shares of common stock sold in this offering will be freely tradable, except that any shares purchased in this offering by our affiliates, as that term is defined in Rule 144 under the Securities Act of 1933, as amended, or the Securities Act, can only be sold in compliance with the Rule 144 limitations described below or in compliance with the lock-up agreements.

The remaining outstanding shares of our common stock will be deemed “restricted securities” as defined in Rule 144. Restricted securities may be sold in the public market only if they are registered under the Securities Act or if they qualify for an exemption from registration under Rule 144 or Rule 701 promulgated under the Securities Act, which rules are summarized below. In addition, substantially all of our security holders have, or will have, entered into market standoff agreements with us or lock-up agreements with the underwriters under which they have agreed, subject to specific exceptions, not to sell any of our stock for at least 180 days following the date of this prospectus, as described below. As a result of these agreements and the provisions of our amended and restated investors’ rights agreement described above under the section entitled “Description of capital stock—Registration rights,” subject to the provisions of Rule 144 or Rule 701, shares will be available for sale in the public market as follows:

- beginning on the date of this prospectus, all of the shares sold in this offering will be immediately available for sale in the public market; and
- beginning 181 days after the date of this prospectus, additional shares will become eligible for sale in the public market, of which shares will be held by affiliates and subject to the volume and other restrictions of Rule 144, as described below.

Lock-up/market standoff agreements

All of our directors and officers and substantially all of our security holders are, or will be, subject to lock-up agreements or market standoff provisions that prohibit them from offering for sale, selling, contracting to sell, granting any option for the sale of, transferring or otherwise disposing of any shares of our common stock, options to acquire shares of our common stock or any security or instrument related to our common stock, or entering into any swap, hedge or other arrangement that transfers any of the economic consequences of ownership of our common stock, for a period of 180 days following the date of this prospectus without the prior written consent of J.P. Morgan Securities LLC, subject to certain exceptions. See the section entitled “Underwriting.”

Rule 144

In general, under Rule 144 as currently in effect, once we have been subject to public company reporting requirements for at least 90 days, a person who is not deemed to have been one of our affiliates for purposes of the Securities Act at any time during the three months preceding a sale and who has beneficially owned the

shares proposed to be sold for at least six months, including the holding period of any prior owner other than our affiliates, is entitled to sell those shares without complying with the manner of sale, volume limitation or notice provisions of Rule 144, subject to compliance with the public information requirements of Rule 144. If such a person has beneficially owned the shares proposed to be sold for at least one year, including the holding period of any prior owner other than our affiliates, then that person would be entitled to sell those shares without complying with any of the requirements of Rule 144.

In general, under Rule 144, as currently in effect, our affiliates or persons selling shares on behalf of our affiliates are entitled to sell upon expiration of the lock-up and market standoff agreements described above, within any three-month period, a number of shares that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering; or
- the average reported weekly trading volume of our common stock during the four calendar weeks preceding the filing of a notice on Form 144 with respect to that sale.

Sales under Rule 144 by our affiliates or persons selling shares on behalf of our affiliates are also subject to certain manner of sale provisions and notice requirements and to the availability of current public information about us.

Rule 701

Rule 701 generally allows a stockholder who purchased shares of our common stock pursuant to a written compensatory plan or contract and who is not deemed to have been an affiliate of our company during the immediately preceding three months to sell these shares in reliance upon Rule 144, but without being required to comply with the public information, holding period, volume limitation or notice provisions of Rule 144. Rule 701 also permits affiliates of our company to sell their Rule 701 shares under Rule 144 without complying with the holding period requirements of Rule 144. All holders of Rule 701 shares, however, are required by that rule to wait until 90 days after the date of this prospectus before selling those shares pursuant to Rule 701 and are subject to the lock-up and market standoff agreements described above.

Form S-8 registration statement

In connection with this offering, we intend to file a registration statement on Form S-8 under the Securities Act covering all of the shares of our common stock subject to outstanding options and the shares of our common stock reserved for issuance under our stock plans. We expect to file this registration statement as soon as permitted under the Securities Act. However, the shares registered on Form S-8 may be subject to the volume limitations and the manner of sale, notice and public information requirements of Rule 144 and will not be eligible for resale until expiration of the lock-up and market standoff agreements to which they are subject.

Registration rights

We have granted demand, piggyback and Form S-3 registration rights to certain of our stockholders to sell our common stock. Registration of the sale of these shares under the Securities Act would result in these shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. For a further description of these rights, see the section entitled “Description of capital stock—Registration rights.”

Material U.S. federal income tax consequences to non-U.S. holders

The following summary describes the material U.S. federal income tax consequences of the acquisition, ownership and disposition of our common stock acquired in this offering by Non-U.S. Holders (as defined below). This discussion does not address all aspects of U.S. federal income taxes, does not discuss the potential application of the alternative minimum tax or Medicare contribution tax on net investment income and does not deal with state or local taxes, U.S. federal gift and estate tax laws, except to the limited extent provided below, or any non-U.S. tax consequences that may be relevant to Non-U.S. Holders in light of their particular circumstances.

Special rules different from those described below may apply to certain Non-U.S. Holders that are subject to special treatment under the Code, such as:

- insurance companies, banks and other financial institutions;
- tax-exempt organizations (including private foundations) and tax-qualified retirement plans;
- foreign governments and international organizations;
- broker-dealers and traders in securities;
- U.S. expatriates and certain former citizens or long-term residents of the United States;
- persons required for U.S. federal income tax purposes to conform the timing of income accruals to their financial statements under Section 451(b) of the Code;
- persons that own, or are deemed to own, more than 5% of our capital stock;
- “controlled foreign corporations,” “passive foreign investment companies” and corporations that accumulate earnings to avoid U.S. federal income tax;
- persons that hold our common stock as part of a “straddle,” “hedge,” “conversion transaction,” “synthetic security” or integrated investment or other risk reduction strategy;
- persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes); and
- partnerships and other pass-through entities, and investors in such pass-through entities (regardless of their places of organization or formation).

Such Non-U.S. Holders are urged to consult their own tax advisors to determine the U.S. federal, state, local and other tax consequences that may be relevant to them.

Furthermore, the discussion below is based upon the provisions of the Code, and U.S. Treasury Regulations, rulings and judicial decisions thereunder as of the date hereof, and such authorities may be repealed, revoked or modified, possibly retroactively, and are subject to differing interpretations which could result in U.S. federal income tax consequences different from those discussed below. We have not requested a ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions or will not take a contrary position regarding the tax consequences described herein, or that any such contrary position would not be sustained by a court.

PERSONS CONSIDERING THE PURCHASE OF OUR COMMON STOCK PURSUANT TO THIS OFFERING SHOULD CONSULT THEIR OWN TAX ADVISORS CONCERNING THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF

ACQUIRING, OWNING AND DISPOSING OF OUR COMMON STOCK IN LIGHT OF THEIR PARTICULAR SITUATIONS AS WELL AS ANY CONSEQUENCES ARISING UNDER THE LAWS OF ANY OTHER TAXING JURISDICTION, INCLUDING ANY STATE, LOCAL OR NON-U.S. TAX CONSEQUENCES OR ANY U.S. FEDERAL NON-INCOME TAX CONSEQUENCES, AND THE POSSIBLE APPLICATION OF TAX TREATIES.

For the purposes of this discussion, a “Non-U.S. Holder” is a beneficial owner of common stock that is not a U.S. Holder or a partnership for U.S. federal income tax purposes. A “U.S. Holder” means a beneficial owner of our common stock that is, for U.S. federal income tax purposes, (a) an individual citizen or resident of the United States, (b) a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes), created or organized in or under the laws of the United States, any state thereof or the District of Columbia, (c) an estate the income of which is subject to U.S. federal income taxation regardless of its source, or (d) a trust if it (1) is subject to the primary supervision of a court within the United States and one or more U.S. persons (within the meaning of Section 7701(a)(30) of the Code) have the authority to control all substantial decisions of the trust or (2) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

If you are an individual non-U.S. citizen, you may, in some cases, be deemed to be a resident alien (as opposed to a nonresident alien) by virtue of being present in the United States for at least 31 days in the calendar year and for an aggregate of at least 183 days during a three-year period ending in the current calendar year. Generally, for this purpose, all the days present in the current year, one-third of the days present in the immediately preceding year, and one-sixth of the days present in the second preceding year, are counted.

Resident aliens are generally subject to U.S. federal income tax as if they were U.S. citizens. Individuals who are uncertain of their status as resident or nonresident aliens for U.S. federal income tax purposes are urged to consult their own tax advisors regarding the U.S. federal income tax consequences of the ownership or disposition of our common stock.

Distributions

We do not expect to make any distributions on our common stock in the foreseeable future. If we do make distributions on our common stock, however, such distributions made to a Non-U.S. Holder of our common stock will constitute dividends for U.S. tax purposes to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital that is applied against and reduces, but not below zero, a Non-U.S. Holder’s adjusted tax basis in our common stock. Any remaining excess will be treated as gain realized on the sale or exchange of our common stock as described below under the section entitled “—Gain on disposition of our common stock.”

Any distribution on our common stock that is treated as a dividend paid to a Non-U.S. Holder that is not effectively connected with the holder’s conduct of a trade or business in the United States will generally be subject to withholding tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty between the United States and the Non-U.S. Holder’s country of residence. To obtain a reduced rate of withholding under a treaty, a Non-U.S. Holder generally will be required to provide the applicable withholding agent with a properly executed IRS Form W-8BEN, IRS Form W-8BEN-E or other appropriate form, certifying the Non-U.S. Holder’s entitlement to benefits under that treaty. Such form must be provided prior to the payment of dividends and must be updated periodically. If a Non-U.S. Holder holds stock through a financial institution or other agent acting on the holder’s behalf, the holder will be required to provide appropriate documentation to such agent. The holder’s agent may then be required to provide certification to the applicable withholding agent, either directly or through other intermediaries. If you are eligible for a reduced rate of U.S. withholding tax under an income tax treaty, you should consult with your own tax advisor to determine if you are able to obtain a refund of any excess amounts withheld by timely filing an appropriate claim for a refund with the IRS.

We generally are not required to withhold tax on dividends paid to a Non-U.S. Holder that are effectively connected with the holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, are attributable to a permanent establishment that the holder maintains in the United States) if a properly executed IRS Form W-8ECI, stating that the dividends are so connected, is furnished to us (or, if stock is held through a financial institution or other agent, to the applicable withholding agent). In general, such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates applicable to U.S. persons. A corporate Non-U.S. Holder receiving effectively connected dividends may also be subject to an additional "branch profits tax," which is imposed, under certain circumstances, at a rate of 30% (or such lower rate as may be specified by an applicable treaty) on the corporate Non-U.S. Holder's effectively connected earnings and profits, subject to certain adjustments.

See also the section below entitled "—Foreign accounts" for additional withholding rules that may apply to dividends paid to certain foreign financial institutions or non-financial foreign entities.

Gain on disposition of our common stock

Subject to the discussions below under the sections entitled "—Backup withholding and information reporting" and "—Foreign accounts," a Non-U.S. Holder generally will not be subject to U.S. federal income or withholding tax with respect to gain realized on a sale or other disposition of our common stock unless (a) the gain is effectively connected with a trade or business of the holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment that the holder maintains in the United States), (b) the Non-U.S. Holder is a nonresident alien individual and is present in the United States for 183 or more days in the taxable year of the disposition and certain other conditions are met, or (c) we are or have been a "United States real property holding corporation" within the meaning of Code Section 897(c)(2) at any time within the shorter of the five-year period preceding such disposition or the holder's holding period in the common stock.

If you are a Non-U.S. Holder described in (a) above, you will be required to pay tax on the net gain derived from the sale at the regular graduated U.S. federal income tax rates applicable to U.S. persons. Corporate Non-U.S. Holders described in (a) above may also be subject to the additional branch profits tax at a 30% rate or such lower rate as may be specified by an applicable income tax treaty. If you are an individual Non-U.S. Holder described in (b) above, you will be required to pay a flat 30% tax on the gain derived from the sale, which gain may be offset by U.S. source capital losses (even though you are not considered a resident of the United States), provided you have timely filed U.S. federal income tax returns with respect to such losses. With respect to (c) above, in general, we would be a United States real property holding corporation if U.S. real property interests as defined in the Code and the U.S. Treasury Regulations comprised (by fair market value) at least half of our worldwide real property interests plus our other assets used or held for use in a trade or business. We believe that we are not, and do not anticipate becoming, a United States real property holding corporation. However, there can be no assurance that we will not become a United States real property holding corporation in the future. Even if we are treated as a U.S. real property holding corporation, gain realized by a Non-U.S. Holder on a disposition of our common stock will not be subject to U.S. federal income tax so long as (1) the Non-U.S. Holder owned, directly, indirectly or constructively, no more than five percent of our common stock at all times within the shorter of (i) the five-year period preceding the disposition or (ii) the holder's holding period and (2) our common stock is regularly traded on an established securities market, such as Nasdaq. However, there can be no assurance that our common stock will qualify as regularly traded on an established securities market.

U.S. federal estate tax

The estates of nonresident alien individuals generally are subject to U.S. federal estate tax on property with a U.S. situs. Because we are a U.S. corporation, our common stock will be U.S. situs property and, therefore, will

be included in the taxable estate of a nonresident alien decedent, unless an applicable estate tax treaty between the United States and the decedent's country of residence provides otherwise. The terms "resident" and "nonresident" are defined differently for U.S. federal estate tax purposes than for U.S. federal income tax purposes. Investors are urged to consult their own tax advisors regarding the U.S. federal estate tax consequences of the ownership or disposition of our common stock.

Backup withholding and information reporting

Generally, we or certain financial middlemen must report information to the IRS with respect to any dividends we pay on our common stock including the amount of any such dividends, the name and address of the recipient, and the amount, if any, of tax withheld. A similar report is sent to the holder to whom any such dividends are paid. Pursuant to tax treaties or certain other agreements, the IRS may make its reports available to tax authorities in the recipient's country of residence.

Dividends paid by us (or our paying agents) to a Non-U.S. Holder may also be subject to U.S. backup withholding. U.S. backup withholding generally will not apply to a Non-U.S. Holder who provides a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, or otherwise establishes an exemption, provided that the applicable withholding agent does not have actual knowledge or reason to know the holder is a U.S. person.

Under current U.S. federal income tax law, U.S. information reporting and backup withholding requirements generally will apply to the proceeds of a disposition of our common stock effected by or through a U.S. office of any broker, U.S. or non-U.S., unless the Non-U.S. Holder provides a properly executed IRS Form W-8BEN or IRS Form W-8BEN-E, as applicable, or otherwise meets documentary evidence requirements for establishing non-U.S. person status or otherwise establishes an exemption. Generally, U.S. information reporting and backup withholding requirements will not apply to a payment of disposition proceeds to a Non-U.S. Holder where the transaction is effected outside the United States through a non-U.S. office of a non-U.S. broker. Information reporting and backup withholding requirements may, however, apply to a payment of disposition proceeds if the broker has actual knowledge, or reason to know, that the holder is, in fact, a U.S. person. For information reporting purposes, certain brokers with substantial U.S. ownership or operations will generally be treated in a manner similar to U.S. brokers.

Backup withholding is not an additional tax. If backup withholding is applied to you, you should consult with your own tax advisor to determine whether you have overpaid your U.S. federal income tax, and whether you are able to obtain a tax refund or credit of the overpaid amount.

Foreign accounts

In addition, U.S. federal withholding taxes may apply under legislation common known as the Foreign Account Tax Compliance Act, or FATCA, on certain types of payments, including dividends paid to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (1) the foreign financial institution agrees to undertake certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. The 30% federal withholding tax described in this paragraph cannot be reduced under an income tax treaty with the United States. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States-owned foreign entities" (each as defined in the

Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Under proposed U.S. Treasury Regulations promulgated by the Treasury Department on December 13, 2018, which state that taxpayers may rely on the proposed Treasury Regulations until final Treasury Regulations are issued, this withholding tax will not apply to the gross proceeds from any sale or disposition of our common stock. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING THE CONSEQUENCES OF ANY PROPOSED CHANGE IN APPLICABLE LAW, AS WELL AS TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, NON-U.S. OR U.S. FEDERAL NON-INCOME TAX LAWS SUCH AS ESTATE AND GIFT TAX.

Underwriting

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, Cowen and Company, LLC and Credit Suisse Securities (USA) LLC are acting as joint book-running managers of the offering and as representatives of the underwriters. We have entered into an underwriting agreement with the representatives. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the initial public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of shares
J.P. Morgan Securities LLC	
Cowen and Company, LLC	
Credit Suisse Securities (USA) LLC	
Canaccord Genuity LLC	
Total	

The underwriters are committed to purchase all the common shares offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common shares directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. Any such dealers may resell shares to certain other brokers or dealers at a discount of up to $ per share from the initial public offering price. After the initial offering of the shares to the public, if all of the common shares are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Sales of shares made outside of the United States may be made by affiliates of the underwriters. The offering of shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

The underwriters have an option to buy up to additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without option to purchase additional shares exercise	With full option to purchase additional shares exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $. We have agreed to reimburse the underwriters for expenses of up to $ related to clearance of this offering with the Financial Industry Regulatory Authority, or FINRA.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in this offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not (i) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise dispose of, directly or indirectly, or file with the SEC a registration statement under the Securities Act of 1933, as amended, or the Securities Act, relating to, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock, or publicly disclose the intention to make any offer, sale, pledge, disposition or filing, or (ii) enter into any swap or other arrangement that transfers all or a portion of the economic consequences associated with the ownership of any shares of common stock or any such other securities (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC for a period of 180 days after the date of this prospectus, other than the shares of our common stock to be sold hereunder and any shares of our common stock issued upon the exercise of options granted under our existing equity incentive plans.

Our directors, executive officers and shareholders have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each of these persons or entities, with limited exceptions, for a period of 180 days after the date of this prospectus, may not, without the prior written consent of J.P. Morgan Securities LLC, (1) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including, without limitation, common stock or such other securities which may be deemed to be beneficially owned by such directors, executive officers, managers and members in accordance with the rules and regulations of the SEC and securities which may be issued upon exercise of a stock option or warrant) or (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the common stock or such other securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of common stock or such other securities, in cash or otherwise, or (3) make any demand for or exercise any right with respect to the registration of any shares of our common stock or any security convertible into or exercisable or exchangeable for our common stock.

The restrictions described in the immediately preceding paragraph do not apply to, among other items, transfers or dispositions of shares of common stock:

- as a bona fide gift, including bona fide gifts to a charity or educational institution, or for bona fide estate planning purposes;
- to any trust for the direct or indirect benefit of the party subject to the lock-up restrictions or the immediate family of such person;
- to any corporation, partnership, limited liability company or other entity under the ownership of the party subject to the lock-up restrictions or the immediate family of such person;

- by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the party subject to the lockup restrictions;
- as distributions to partners, members or stockholders of the party subject to the lock-up restrictions; and
- as transfers to affiliates, investment funds or other entities controlled or managed by the party subject to the lock-up restrictions; and

provided that in the case of any transfer or distribution pursuant to the six subclauses above, (i) each transferee, donee or distributee shall sign and deliver a lock-up letter in the form executed by the party subject to the lock up restrictions and (ii) no filing or other public announcement under Section 16(a)of the Exchange Act of 1934, as amended, or the Exchange Act, shall be required or shall be voluntarily made during the restricted period (other than a filing on Form 5 or a required filing on a Schedule 13F or 13G);

- the transfer pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction made to all holders of our common stock involving a change of control; provided that in the event such tender offer, merger, consolidation or other such transaction is not completed, the shares of our common stock shall remain subject to the lock-up restrictions;
- the exercise of outstanding warrants or options to purchase shares of common stock granted under any stock incentive plan or stock purchase plan of ours, provided that the underlying shares shall continue to be subject to the lock-up restrictions;
- the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of shares of common stock during the restricted period and (ii) no filing under the Exchange Act or other public announcement shall be required or voluntarily made by or on behalf of the party subject to the lock-up restrictions regarding the establishment of such plan;
- the transfer or disposition of shares of common stock acquired in this offering or on the open market following this offering, provided that no filing under the Exchange Act or other public announcement shall be required or voluntarily made in connection with such transfer or disposition during the restricted period (other than a required filing on a Schedule 13F or 13G);
- transfers or surrenders to us of shares of common stock pursuant to any contractual arrangement that provides us with an option to repurchase such shares in connection with the termination of the party subject to the lock-up's employment or service relationship with us, or pursuant to a right of first refusal with respect to transfers of such shares of common stock or other securities, or on a cashless or "net exercise" basis or to cover tax withholding obligations of the party subject to the lock-up, in connection with the vesting or exercise of such shares of common stock or other securities, provided that any filing under Section 16 of the Exchange Act shall clearly indicate in the footnotes thereto that the filing relates to such circumstances described above and no other public announcement shall be required or voluntarily made in connection with such transfers or surrenders; and
- transfers or dispositions of shares of common stock by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement or other court order, provided that the recipient of such shares shall execute and deliver to J.P. Morgan Securities LLC a lock-up letter in the form executed by the party subject to the lock-up restrictions, provided, further that any filing under Section 16 of the Exchange Act shall clearly indicate in the footnotes that the filing relates to the circumstances described above and no other public announcement shall be required or voluntarily made in connection with such transfer or disposition.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act.

We will apply to have our common stock approved for listing on Nasdaq under the symbol “STOK.”

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be “covered” shorts, which are short positions in an amount not greater than the underwriters’ option to purchase additional shares referred to above, or may be “naked” shorts, which are short positions in excess of that amount. The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the underwriters;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for our common shares, or that the shares will trade in the public market at or above the initial public offering price.

Other relationships

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Certain of the underwriters and their respective affiliates may in the future provide various commercial banking, financial advisory or investment banking advice or other services in the ordinary course of their business, for which they will receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their respective affiliates, officers, directors and employees may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future. The underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of our securities and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in our securities.

Selling restrictions

General

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the representatives are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

European Economic Area

In relation to each Member State of the European Economic Area (each, a "Relevant Member State"), no offer of shares may be made to the public in that Relevant Member State other than:

A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;

B. to fewer than 100 or, if the Relevant Member State has implemented the relevant provision of the 2010 PD Amending Directive, 150, natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives; or

C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require the Company or the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a "qualified investor" within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive. In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

The Company, the representatives and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

This prospectus has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus for offers of shares. Accordingly, any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus may only do so in circumstances in which no obligation arises for the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the Company nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the Company or the underwriters to publish a prospectus for such offer.

For the purpose of the above provisions, the expression "an offer to the public" in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State and the expression "Prospectus Directive" means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member States) and includes any relevant implementing measure in the Relevant Member State and the expression "2010 PD Amending Directive" means Directive 2010/73/EU.

Hong Kong

The shares may not be offered or sold by means of any document other than (i) in circumstances that do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), or (ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances that do not result in the document being a "prospectus" within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to shares that are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Law of Japan, or the Financial Instruments and Exchange Law, and each underwriter has agreed that it will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term, as used in this prospectus means any person resident in Japan, including any corporation or other entity organized under the laws of Japan) or to others for re-offering or resale, directly or indirectly, in Japan or to a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Law and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 by a relevant person that is: (a) a corporation (which is not an accredited investor) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the shares under Section 275 except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person, or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA; (2) where no consideration is given for the transfer; or (3) by operation of law.

Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared

without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document, nor any other offering or marketing material relating to the shares or this offering, may be publicly distributed or otherwise made publicly available in Switzerland. Neither this document nor any other offering or marketing material relating to this offering, the Company, or the shares has been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

United Arab Emirates

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for this prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus, you should consult an authorized financial advisor.

United Kingdom

This document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are “qualified investors” (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19 (5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the “Order”) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49 (2) (a) to (d) of the Order (all such persons together being referred to as “relevant persons”).

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

Legal matters

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Fenwick & West LLP, San Francisco, California. Certain legal matters relating to the offering will be passed upon for the underwriters by Davis Polk & Wardwell LLP, New York, New York. Fenwick & West LLP beneficially owns an aggregate of 25,125 shares of our common stock.

Experts

The consolidated financial statements of Stoke Therapeutics, Inc. as of December 31, 2018 and 2017, and for each of the years in the two-year period ended December 31, 2018, have been included herein and in the registration statement in reliance upon the report of KPMG LLP, an independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing.

Where you can find additional information

We have filed with the SEC a registration statement on Form S-1 under the Securities Act of 1933, as amended, with respect to the shares of common stock offered hereby. This prospectus, which constitutes a part of the registration statement, does not contain all of the information set forth in the registration statement or the exhibits filed therewith. For further information about us and the common stock offered hereby, reference is made to the registration statement and the exhibits filed therewith. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed for the complete contents of that contract or document. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The exhibits to the registration statement should be reviewed for the complete contents of these contracts and documents.

We currently do not file periodic reports with the SEC. Upon the completion of this offering, we will be required to file periodic reports, proxy statements and other information with the SEC pursuant to the Securities Exchange Act of 1934, as amended. The SEC maintains a website that contains reports, proxy and information statements and other information regarding registrants that file electronically with the SEC. The address of the website is www.sec.gov.

We also maintain a website at www.stoketherapeutics.com. Upon completion of this offering, you may access these materials at our website free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

Index to financial statements

Report of independent registered public accounting firm

To the Stockholders and Board of Directors
Stoke Therapeutics, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Stoke Therapeutics, Inc., and subsidiary (together, the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for each of the years in the two-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2019.

Boston, MA
March 26, 2019

Stoke Therapeutics, Inc.
Consolidated balance sheets
(in thousands, except share and per share amounts)

	As of December 31,	
	2018	**2017**
Assets		
Current assets:		
Cash and cash equivalents	$105,399	$ 1,797
Prepaid expenses and other current assets	548	113
Interest receivable	196	—
Total current assets	106,143	1,910
Restricted cash	204	56
Property and equipment, net	1,192	473
Total assets	$107,539	$ 2,439
Liabilities and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable	$ 1,071	$ 141
Accrued and other current liabilities	1,396	574
Simple agreement for future equity	—	3,000
Total current liabilities	2,467	3,715
Long term liabilities	4	16
Total liabilities	2,471	3,731
Commitments and contingencies (Note 7)		
Stockholders' equity (deficit)		
Convertible Preferred Stock, par value of $0.0001 per share; 225,584,874 and 59,575,576 shares authorized, 225,584,874 and 49,540,132 shares issued and outstanding as of December 31, 2018 and 2017, respectively; aggregate liquidation preference of $130,850 at December 31, 2018	23	5
Common stock, par value of $0.0001 per share; 278,527,249 and 79,000,000 shares authorized, 7,236,019 and 6,665,733 shares issued and outstanding as of December 31, 2018 and 2017, respectively	1	1
Additional paid-in capital	130,754	11,891
Accumulated deficit	(25,710)	(13,189)
Total stockholders' equity (deficit)	105,068	(1,292)
Total liabilities and stockholders' equity (deficit)	$107,539	$ 2,439

The accompanying notes are an integral part of these consolidated financial statements.

Stoke Therapeutics, Inc.
Consolidated statements of operations
(in thousands, except share and per share amounts)

	Year Ended December 31,	
	2018	**2017**
Revenue	$ —	$ —
Operating expenses:		
Research and development	8,371	3,598
General and administrative	4,410	1,956
Total operating expenses	12,781	5,554
Loss from operations	(12,781)	(5,554)
Other income (expense):		
Interest income	270	—
Other expense, net	(10)	(4)
Total other income (expense)	260	(4)
Net loss	(12,521)	$ (5,558)
Net loss per share attributable to common stockholders—basic and diluted	$ (1.77)	$ (0.83)
Weighted average common shares outstanding—basic and diluted	7,056,159	6,665,733

The accompanying notes are an integral part of these consolidated financial statements.

Stoke Therapeutics, Inc.
Consolidated statements of stockholders' equity (deficit)
(in thousands, except share and per share amounts)

	Convertible Preferred Stock		Common Stock				
	Shares	Amount	Shares	Amount	Additional paid-in capital	Accumulated deficit	Stockholders' equity (Deficit)
Balance as of December 31, 2016	36,998,326	$ 4	6,665,733	$ 1	$ 8,891	$ (7,631)	$ 1,265
Stock-based compensation	—	—	—	—	26	—	26
Issuance of convertible Preferred Stock, net of issuance costs of $25	12,541,806	1	—	—	2,974	—	2,975
Net loss	—	—	—	—	—	(5,558)	(5,558)
Balance as of December 31, 2017	49,540,132	5	6,665,733	1	11,891	(13,189)	(1,292)
Stock-based compensation	—	—	—	—	240	—	240
Issuance of common stock	—	—	570,286	—	19	—	19
Issuance of convertible Preferred Stock, net of issuance costs of $378	176,044,742	18	—	—	118,604	—	118,622
Net loss	—	—	—	—	—	(12,521)	(12,521)
Balance as of December 31, 2018	225,584,874	$ 23	7,236,019	$ 1	$ 130,754	$ (25,710)	$ 105,068

The accompanying notes are an integral part of these consolidated financial statements.

Stoke Therapeutics, Inc.
Consolidated statements of cash flows
(in thousands)

	Year Ended December 31,	
	2018	**2017**
Cash flows from operating activities:	$ (12,521)	$(5,558)
Net loss		
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	214	113
Stock-based compensation	240	26
Loss on disposal of property and equipment	10	4
Changes in assets and liabilities:		
Prepaid expenses and other current assets	(632)	(72)
Accounts payable and accrued liabilities	1,735	100
Deferred rent	(10)	3
Net cash used in operating activities	(10,964)	(5,384)
Cash flows from investing activities:		
Purchases of property and equipment	(935)	(113)
Proceeds from sale of property and equipment	10	—
Net cash used in investing activities	(925)	(113)
Cash flows from financing activities:		
Proceeds from simple agreement for future equity	—	3,000
Proceeds from issuance of convertible Preferred Stock	116,000	3,000
Preferred Stock issuance costs	(378)	(25)
Proceeds from the issuance of common stock	19	—
Other	(2)	(1)
Net cash provided by financing activities	115,639	5,974
Net increase in cash, cash equivalents and restricted cash	103,750	477
Cash, cash equivalents and restricted cash—beginning of year	1,853	1,376
Cash, cash equivalents and restricted cash—end of year	$105,603	$ 1,853
Supplemental disclosure of non-cash investing and financing activities:		
Property and equipment included in accrued expenses and accounts payable	$ 19	$ —
Issuance of convertible Preferred Stock in exchange for simple agreement for future equity	$ 3,000	$ —

The accompanying notes are an integral part of these consolidated financial statements.

Stoke Therapeutics, Inc. and subsidiaries
Notes to consolidated financial statements
(in thousands, except share and per share amounts)

1. Nature of the business and basis of presentation

Organization

Stoke Therapeutics, Inc. (the Company) was founded in June 2014 and was incorporated under the laws of the State of Delaware. The Company is an early-stage biopharmaceutical company pioneering a new way to treat the underlying causes of severe genetic diseases by precisely upregulating protein expression.

Uncertainties

The Company is subject to risks and uncertainties common to early-stage companies in the biotechnology industry including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization. These efforts require significant amounts of additional capital, adequate personnel and infrastructure and extensive compliance-reporting capabilities. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will realize significant revenue from product sales.

Liquidity

The Company expects that its operating losses and negative cash flows will continue for the foreseeable future. As of the issuance date of its consolidated financial statements as of and for the year ended December 31, 2018, the Company expects that its cash and cash equivalents will be sufficient to fund its operating expenses and capital expenditure requirements through at least twelve months from the issuance date of its consolidated financial statements. The future viability of the Company beyond that date is dependent on its ability to raise additional capital to finance its operations.

The Company plans to seek additional funding through public or private equity offerings, debt financings, other collaborations, strategic alliances and licensing arrangements. The Company may not be able to obtain financing on acceptable terms, or at all, and the Company may not be able to enter into strategic alliances or other arrangements on favorable terms, or at all. The terms of any financing may adversely affect the holdings or the rights of the Company's stockholders. If the Company is unable to obtain funding, the Company could be required to delay, reduce or eliminate research and development programs, product portfolio expansion or future commercialization efforts, which could adversely affect its business prospects.

2. Summary of significant accounting policies and recent accounting pronouncements

Basis of presentation and consolidation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles (GAAP), and include the accounts of Stoke Therapeutics, Inc. and its wholly-owned subsidiary. All intercompany transactions between and among its consolidated subsidiary have been eliminated.

Use of estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, equity, expenses and

disclosure of contingent assets and liabilities. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. Actual results could differ from our estimates.

Cash and cash equivalents

The Company considers all highly liquid investments with an original maturity of three months or less at the date of purchase to be cash equivalents. The Company deposits its cash in checking, sweep account and money market accounts.

Restricted cash

At December 31, 2018, restricted cash consisted of money market accounts collateralizing a letter of credit issued as a security deposit in connection with the Company's lease of its corporate facilities.

The following table reconciles cash and cash equivalents and restricted cash per the consolidated balance sheet to the statement of cash flows:

	As of December 31,	
	2018	**2017**
Cash and cash equivalents	$ 105,399	1,797
Restricted cash	204	56
	$ 105,603	1,853

Concentration of credit risk

Financial instruments that potentially expose the Company to concentrations of credit risk primarily consist of cash and cash equivalents. The Company maintains its cash and cash equivalents at an accredited financial institution in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

Fair value of financial instruments

Accounting Standards Codification (ASC) Topic 820, *Fair Value Measurement* (ASC 820), establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and the Company's own assumptions (unobservable inputs). Observable inputs are those that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability and are developed based on the best information available in the circumstances. ASC 820 identifies fair value as the exchange price, or exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As a basis for considering market participant assumptions in fair value measurements, ASC 820 establishes a three-tier value hierarchy that distinguishes between the following:

Level 1—Quoted market prices in active markets for identical assets or liabilities.

Level 2—Inputs other than Level 1 inputs that are either directly or indirectly observable, such as quoted market prices, interest rates and yield curves.

Level 3—Unobservable inputs developed using estimates of assumptions developed by the Company, which reflect those that a market participant would use.

To the extent the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair values requires more judgment. Accordingly, the degree of judgment

exercised by the Company in determining fair value is greatest for instruments categorized as Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

Deferred offering costs

The Company capitalizes certain legal, professional accounting and other third-party fees that are directly associated with in-process equity financings as deferred offering costs until such financings are consummated. After consummation of the equity financing, these costs are recorded in stockholders' equity (deficit) as a reduction of additional paid-in capital generated as a result of the offering. Should the in-process equity financing be abandoned the deferred offering costs will be expensed immediately as a charge to operating expenses in the consolidated statements of operations.

Property and equipment

Property and equipment are initially recorded at cost less accumulated depreciation. Cost includes the acquisition costs and all costs necessary to bring the asset to the location and working condition necessary for its intended use. Depreciation expense is recognized using the straight-line method over the estimated useful life of each asset. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the accompanying consolidated statements of operations. Expenditures for normal, recurring or periodic repairs and maintenance related to property and equipment are charged to expense as incurred. The cost for planned major maintenance activities, including the related acquisition or construction of assets, is capitalized if it will result in future economic benefits.

Estimated useful lives for property and equipment are as follows:

Property and equipment	Estimated useful life
Computer and office equipment	3-5 years
Laboratory equipment and Furniture and fixtures	5-7 years
Leasehold improvements	Lesser of estimated useful life or remaining lease term

Impairment of long-lived assets

The Company reviews the recoverability of its long-lived assets when events or changes in circumstances occur that indicate that the carrying value of the assets may not be recoverable. The assessment of possible impairment is based on the ability to recover the carrying value of the assets from the expected future cash flows (undiscounted and without interest expense) of the related operations. If these cash flows are less than the carrying value of such assets, an impairment loss for the difference between the estimated fair value and carrying value is recorded. There were no impairment losses recognized during the years ended December 31, 2018 and 2017.

Research and development costs

Research and development costs are expensed as incurred. Research and development expenses are comprised of costs incurred in performing research and development activities, including salaries and benefits, facilities costs, depreciation, third-party license fees, and costs related to third parties engaged to conduct preclinical research development activities.

The Company has entered into various research and development contracts with research institutions and other companies to conduct research on its behalf. These agreements are generally cancellable. The Company records

accruals for estimated ongoing research costs. When evaluating the adequacy of the accrued liabilities, the Company analyzes progress of the studies, including the phase or completion of events, invoices received and contracted costs. Significant judgments and estimates may be made in determining the accrued balances at the end of any reporting period. Actual results could differ from the Company's estimates. The Company's historical accrual estimates have not been materially different from the actual costs.

Stock options

The Company measures its stock-based awards granted based on the estimated fair values of the awards and recognizes the compensation for employees and nonemployees over the requisite service period. The Company uses the Black-Scholes option-pricing model to estimate the fair value of its stock-based awards. The Company has elected the practical expedient to use the midpoint between vesting date and the contractual term as the expected term for certain awards with service or performance conditions. Stock-based compensation is recognized using the straight-line method. Forfeitures of unvested stock-based awards are accounted for when they occur.

Patent costs

All patent-related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses in the accompanying consolidated statements of operations.

Rent expense

The Company's real estate operating lease provides for scheduled annual rent increases throughout the lease term. The Company recognizes the effects of the scheduled rent increases on a straight-line basis over the full term of the lease. Tenant improvement allowances, if any, provided by a landlord are recorded as deferred rent and amortized as reduction to rent expense over the lease term.

Income taxes

The Company accounts for income taxes using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the estimated future tax consequences attributable to temporary differences between the consolidated financial statement carrying amounts of existing assets and liabilities and their respective tax base. Deferred tax assets and liabilities are determined on the basis of the differences between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the temporary differences are expected to be settled or recovered. Changes in deferred tax assets and liabilities are recorded in the provision for income taxes. The Company assesses the likelihood that its deferred tax assets will be recovered from future taxable income and, to the extent it believes, based upon the weight of available evidence that it is more likely than not that all or a portion of the deferred tax assets will not be realized, a valuation allowance is established through a charge to income tax expense. Potential for recovery of deferred tax assets is evaluated by estimating the future taxable profits expected and considering prudent and feasible tax planning strategies. At December 31, 2018 and 2017, the Company has recorded a full valuation allowance.

Reserves are provided for tax benefits for which realization is uncertain. Such benefits are only recognized when the underlying tax position is considered more-likely-than-not to be sustained on examination by a taxing authority, assuming they possess full knowledge of the position and facts. Interest and penalties related to uncertain tax positions are recognized in the provision of income taxes; however, the Company currently has no interest or penalties related to uncertain income tax benefits.

The Tax Cuts and Jobs Act (the TCJA) was enacted on December 22, 2017. The TCJA reduces the U.S. federal corporate tax rate from a top rate of 35% to a flat rate of 21%. The Company continues to monitor for

legislative developments, issuance of regulations and technical memorandum to provide further clarification and/or interpretations of the TCJA and will adjust its consolidated financial statements as needed.

Net loss per share

The Company calculates basic and diluted net loss per share attributable to common stockholders in conformity with the two-class method required for participating securities. The Company considers its convertible preferred stock (Preferred Stock) to be participating securities as in the event a dividend is paid on common stock, the holders of Preferred Stock would be entitled to receive dividends on a basis consistent with the common stockholders. Under the two-class method, the net loss attributable to common stockholders is not allocated to the Preferred Stock as the holders of the Preferred Stock do not have a contractual obligation to share in losses.

Under the two-class method, basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted average number of shares of common stock.

Segment and geographic information

Operating segments are defined as components of an entity about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company operates in one segment in the United States. The Company's chief executive officer, as the chief operating decision-maker, manages and allocates resources to the operations of the Company on a total company basis using consolidated financial information.

Emerging growth company and smaller reporting company status

The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (the JOBS Act). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act, until such time as those standards apply to private companies.

The Company has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that it is (i) no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, the Company's consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

The Company will remain an emerging growth company until the earliest of (i) the last day of the Company's first fiscal year (a) following the fifth anniversary of the completion of this offering, (b) in which the Company has total annual gross revenues of at least $1.07 billion, or (c) when the Company is deemed to be a large accelerated filer, which means the market value of the Company's common stock that is held by non-affiliates exceeds $700.0 million as of the prior June 30th and (ii) the date on which the Company has issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

The Company is also a "smaller reporting company," meaning that in the event of an initial public offering the market value of its stock held by non-affiliates plus the proposed aggregate amount of gross proceeds to the Company as a result of such offering is less than $700 million and its annual revenue is less than $100 million during the most recently completed fiscal year. The Company may continue to be a smaller reporting company as long as either (i) the market value of its stock held by non-affiliates is less than $250 million or (ii) its annual revenue is less than $100 million during the most recently completed fiscal year and the market value of its

stock held by non-affiliates is less than $700 million. If the Company is a smaller reporting company at the time it ceases to be an emerging growth company, the Company may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, the Company may choose to present only the two most recent fiscal years of audited financial statements in its Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Recently adopted accounting pronouncements

In May 2017, the FASB issued ASU 2017-09, *Compensation—Stock Compensation* (Topic 718): *Scope of Modification Accounting*, which provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. The amendments in this ASU should be applied prospectively to an award modified on or after the adoption date. The Company adopted ASU 2017-09 effective January 1, 2018, and the adoption of ASU 2017-09 did not impact the Company's consolidated financial statements or financial statement disclosures.

Recently issued accounting pronouncements

In February 2016, the FASB issued ASU 2016-02, *Leases* (Topic 842), with guidance regarding the accounting for and disclosure of leases. The update requires lessees to recognize all leases, including operating leases, with a term greater than 12 months on the consolidated balance sheet. This update also requires lessees and lessors to disclose key information about their leasing transactions. This guidance will be effective for public companies for annual and interim periods beginning after December 15, 2018. For all other entities, this standard is effective for annual reporting periods beginning after December 15, 2019, and interim periods within annual periods beginning after December 15, 2020. The Company will adopt this standard on January 1, 2020. While the Company expects the implementation of ASU 2016-02 to result in the recognition of right-of-use assets and lease liabilities for leased facilities, the Company is still evaluating the impact that the adoption of ASU 2016-2 will have on its consolidated financial statements.

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share* (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): *I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception*. Part I of this update addresses the complexity of accounting for certain financial instruments with down round features. Down round features are features of certain equity-linked instruments (or embedded features) that result in the strike price being reduced on the basis of the pricing of future equity offerings. Current accounting guidance creates cost and complexity for entities that issue financial instruments (such as warrants and convertible instruments) with down round features that require fair value measurement of the entire instrument or conversion option. Part II of this update addresses the difficulty of navigating Topic 480, Distinguishing Liabilities from Equity, because of the existence of extensive pending content in the FASB Accounting Standards Codification. This pending content is the result of the indefinite deferral of accounting requirements about mandatorily redeemable financial instruments of certain nonpublic entities and certain mandatorily redeemable noncontrolling interests. The amendments in Part II of this update do not have an accounting effect. For public business entities, the amendments in Part I of ASU-2017-11 are effective for fiscal years and interim periods within those years beginning after December 15, 2018. For all other entities, the amendments in Part I of this update are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. The Company intends to adopt Part I of this update on January 1, 2020. Early adoption is permitted for all entities, including adoption in an interim period. The Company is currently assessing the potential impact of adopting ASU 2017-11 on its consolidated financial statements and financial statement disclosures.

In August 2018, the FASB issued ASU 2018-13, *"Fair Value Measurement (Topic 820), Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement".* This ASU removed the following disclosure requirements: (1) the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy; (2) the policy for timing of transfers between levels; and (3) the valuation processes for Level 3 fair value measurements. Additionally, this update added the following disclosure requirements: (1) the changes in unrealized gains and losses for the period included in other comprehensive income and loss for recurring Level 3 fair value measurements held at the end of the reporting period; (2) the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. For certain unobservable inputs, an entity may disclose other quantitative information (such as the median or arithmetic average) in lieu of the weighted average if the entity determines that other quantitative information would be a more reasonable and rational method to reflect the distribution of unobservable inputs used to develop Level 3 fair value measurements. ASU 2018-13 will be effective for all entities, for fiscal years beginning after December 15, 2019 with early adoption permitted. The Company intends to adopt this standard on January 1, 2020 and does not expect that the adoption of this update will have a material impact on its consolidated financial statements.

3. Fair value measurements

There were no assets or liabilities carried at fair value on a recurring basis as of December 31, 2018. As of December 31, 2017, the Company had a $3,000 Simple Agreement for Future Equity (SAFE) obligation, which represents a Level 3 measurement within the fair value hierarchy.

The following tables present information about the Company's financial assets measured at fair value on a recurring basis and indicate the level of the fair value hierarchy utilized to determine such fair values:

	Fair value measurements as of December 31, 2018			
	Level 1	**Level 2**	**Level 3**	**Total**
Cash equivalents:				
Money market funds	$105,399	$ —	$ —	$105,399
Total	$105,399	$ —	$ —	$105,399

	Fair value measurements as of December 31, 2017			
	Level 1	**Level 2**	**Level 3**	**Total**
Cash equivalents:				
Money market funds	$ 1,797	$ —	$ —	$1,797
Total	$ 1,797	$ —	$ —	$1,797
Debt:				
Simple agreement for future equity	$ —	$ —	$ 3,000	$3,000
Total	$ —	$ —	$ 3,000	$3,000

The Company's assets with fair value categorized as Level 1 within the fair value hierarchy include money market funds. Money market funds are publicly traded mutual funds and are presented as cash equivalents on the consolidated balance sheets as of December 31, 2018 and 2017.

The following table presents a roll-forward of the fair value of the SAFE for which fair value is determined by Level 3 inputs:

Balance as of January 1, 2017	$ —
Initial fair value	3,000
Fair value adjustment	—
Balance as of December 31, 2017	3,000
Fair value adjustment	—
Conversion into Preferred Stock, January 2018	(3,000)
Balance as of December 31, 2018	$ —

Fair value of the SAFE on issuance was determined to be equal to the proceeds received. Fair value of the SAFE on conversion into Preferred Stock (see Notes 6 and 8) was determined to be equal to the fair value of the 7,839,038 Preferred Stock received ($3,000). Given the proximity of the conversion of the SAFE to the financial reporting period end, the fair value of the SAFE as of December 31, 2017 was also determined to be equal to the fair value of the Preferred Stock, of $3,000, received on conversion.

There were no transfers among Level 1, Level 2, or Level 3 categories in the periods presented.

The carrying value of cash, cash equivalents, accounts payable and accrued expenses that are reported on the consolidated balance sheets approximate their fair value due to the short-term nature of these assets and liabilities.

4. Property and equipment, net

Property, and equipment, net consisted of the following:

	As of December 31,	
	2018	**2017**
Laboratory equipment	$ 1,485	$ 583
Furniture and fixtures	—	20
Leasehold improvements	—	5
Office equipment	70	37
Construction in progress	16	—
	1,571	645
Less accumulated depreciation	(379)	(172)
	$ 1,192	$ 473

Depreciation expense was $214 and $113 for the years ended December 31, 2018 and 2017, respectively.

5. Accrued and other current liabilities

Accrued and other current liabilities consisted of the following:

	As of December 31,	
	2018	**2017**
Accrued employee compensation costs	$ 901	$ 382
Accrued professional	200	102
Accrued research and development costs	234	70
Accrued other	61	20
	$ 1,396	$ 574

6. Simple agreement for future equity

In October 2017, the Company entered into a simple agreement for future equity (the SAFE) with an investor, receiving $3,000 in exchange for the investor's right to participate in a future equity financing. The SAFE contained a number of conversion and redemption provisions, including settlement upon liquidity or dissolution events. The Company elected the fair value option of accounting for the SAFE (see Note 3). Issue costs of $21 related to the SAFE were recorded as a general and administrative expense for the year ended December 31, 2017 in the accompanying consolidated statements of operations. In January 2018, the investor exercised its rights to convert the SAFE in connection with the Company's equity financing (See Note 8) and exchanged the SAFE for 7,839,038 shares of Series A-2 convertible Preferred Stock (Series A-2 Preferred).

7. Commitments and contingencies

Operating lease

In December 2015, the Company entered into an agreement to lease its facility under a non-cancellable operating lease that expires December 2019. The lease includes two renewal options, each for five-year terms and at fair market value upon exercise. The lease contains escalating rent clauses which require higher rent payments in future years. The Company expenses rent on a straight-line basis over the term of the lease. The lease was terminated by the Company, effective December 31, 2018, without early termination fees or any additional obligation to the landlord.

In August 2018, the Company entered into an agreement to sublease approximately 23,000 square feet of space for a term of three years. Lease terms are triple net lease commencing at $886 per year, then with three percent annual base rent increases plus operating expenses, real estate taxes, utilities and janitorial fees. The lease commencement date was December 10, 2018.

In December 2018, the Company entered into an agreement to lease 2,485 square feet of space for a term of three years. The lease includes one renewal option for an additional two years. Lease terms commence at $231 per annum, with 2.5% annual base rent increases plus operating expenses, real estate taxes, utilities and janitorial fees. The Company expects to occupy this space in the first half of 2019.

As of December 31, 2018, the future minimum payments for operating leases are as follows:

2019	$1,051
2020	1,149
2021	1,102
2022	71
2023	—
Thereafter	—
	$3,373

Rent expense incurred under operating leases was approximately $326 and $235 for the years ended December 31, 2018 and 2017, respectively.

Consulting Agreement

In October 2014, we entered into a consulting agreement with a member of our board of directors, who is also an employee of Cold Spring Harbor Laboratory (CSHL), to provide consulting services related to scientific research related to the development of antisense-based drugs, therapies, diagnostic and research tools, products, services and intellectual property. We made payments of $100 in each of the years ended December 31, 2018 and 2017, respectively, for such consulting services. The initial term of this agreement was five years and may be extended by the mutual consent of the Company and the board member.

License and research agreements

In July 2015, the Company entered into a worldwide license agreement, or the CSHL Agreement, with CSHL, with respect to Targeted Augmentation of Nuclear Gene Output (TANGO) patents. Under the CSHL Agreement, the Company receives an exclusive (except with respect to certain government rights and non-exclusive licenses), worldwide license under certain patents and applications relating to TANGO. As part of the CSHL Agreement, the Company granted CSHL 1,640,608 shares of common stock valued based on an independent appraisal at approximately $65. The CSHL Agreement obligates the Company to make additional payments that are contingent upon certain milestones being achieved. The Company is also required to pay royalties, tiered based on the scope of patent coverage for each licensed product, ranging from a low-single digit percentage to a mid-single digit percentage on annual net sales. These royalty obligations apply on a licensed product-by-licensed product and country-by-country basis until the latest of (i) the expiration of the last valid claim of a CSHL patent covering the applicable licensed product or (ii) the expiration of any regulatory exclusivity for the applicable licensed product. In addition, if the Company sublicenses the rights under the CSHL Agreement, the Company is required to pay a low double-digit percentage of the sublicense revenue to CSHL, which may be reduced to a low double-digit or a mid-single digit percentage upon achievement of certain clinical milestones for the applicable licensed product. Finally, the Company is required to pay an annual license maintenance fee of $10, which amount is creditable against any owed royalty or milestone payments. The maximum aggregate potential milestone payments payable total approximately $900. Additionally, certain licenses under the CSHL Agreement require the Company to reimburse CSHL for certain past and ongoing patent related expenses, however there were no expenses related to these reimbursable patent costs during the years ended December 31, 2018 and 2017.

In April 2016, the Company entered into an exclusive, worldwide license agreement with the University of Southampton, or the Southampton Agreement, whereby the Company acquired rights to foundational technologies related to the Company's TANGO technology. Under the Southampton Agreement, the Company receives an exclusive, worldwide license under certain licensed patents and applications relating to TANGO. As part of the Southampton Agreement, the Company paid 55 pounds sterling (approximately $72 as of the date thereof) as an up-front license fee. Under the Southampton Agreement, the Company may be obligated to make additional payments that are contingent upon certain milestones being achieved, as well as royalties on future product sales. These royalty obligations survive until the latest of (i) the expiration of the last valid claim of a licensed patent covering a subject product or (ii) the expiration of any regulatory exclusivity for the subject product in a country. In addition, if the Company sublicenses its rights under the Southampton Agreement, the Company is required to pay a mid-single digit percentage of the sublicense revenue to the University of Southampton. The maximum aggregate potential milestone payments payable by the Company total approximately 400 pounds sterling (approximately $508 as of December 31, 2018). As of December 31, 2018, and 2017, the Company has recorded no liabilities under the Southampton Agreement.

Sponsored research agreement

In December 2017, the Company entered into a sponsored research agreement with the University of Michigan (the University of Michigan Agreement) to fund research conducted at the University of Michigan through November 2018. The budget for the scope of work described in the research agreement was $428. In December 2018, the University of Michigan Agreement was renewed and extended through November 2020 with a budget for the scope of work of $624. The costs incurred by the Company under the University of Michigan Agreement are recorded as research and development expense and expensed in the period in which they are incurred. Research and development spending under the University of Michigan Agreement was $428 and $12 for years ended December 31, 2018 and 2017, respectively.

Litigation

The Company may periodically become subject to legal proceedings and claims arising in connection with ongoing business activities, including claims or disputes related to patents that have been issued or that are pending in the field of research on which it is focused. As of December 31, 2018, the Company had no legal proceedings to which it was a party or to which its property was subject.

8. Convertible preferred stock

As of December 31, 2018, the Company's amended and restated certificate of incorporation authorized the Company to issue 225,584,874 shares of $0.0001 par value convertible preferred stock, 49,540,132 are designated Series A convertible preferred stock (Series A Preferred), 75,777,370 are designated Series A-2 Preferred and 100,267,372 are designated Series B convertible preferred stock (Series B Preferred) (collectively, the Preferred Stock). The following table summarizes the Company's issued and outstanding Preferred Stock:

	Series A Preferred		Series A-2 Preferred		Series B Preferred		Total convertible Preferred	
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount
Balance, January 1, 2017	36,998,326	$ 8,750	—	$ —	—	$ —	36,998,326	$ 8,750
Issuance, net of issuance costs of $25	12,541,806	2,975	—	—	—	—	12,541,806	2,975
Balance, December 31, 2017	49,540,132	11,725	—	—	—	—	49,540,132	11,725
Issuance upon conversion of SAFE	—	—	7,839,038	3,000	—	—	7,839,038	3,000
Issuance, net of issuance costs of $120	—	—	67,938,332	25,880	—	—	67,938,332	25,880
Issuance, net of issuance costs of $258	—	—	—	—	100,267,372	89,742	100,267,372	89,742
Balance, December 31, 2018	49,540,132	$ 11,725	75,777,370	$ 28,880	100,267,372	$ 89,742	225,584,874	$ 130,347

The Company's Preferred Stock has the following rights and preferences, privileges and restrictions:

Voting rights

On any matter presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company, each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the certificate of incorporation of the Company, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

For so long as any shares of Preferred Stock remain outstanding, the holders of record of the shares of Preferred Stock, exclusively and as a separate class, shall be entitled to elect two directors of the Company.

Dividends

The holders of shares of Preferred Stock shall be entitled to receive non-cumulative dividends at the rate of eight percent of the original issue price (see below) of such series of such Preferred Stock per annum on such shares of Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Preferred Stock) when, as, and if declared by the Board of Directors (the Preferred Dividend).

The Company shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Company (other than dividends on shares of Common Stock payable in shares of Common Stock)

unless the holders of the Preferred Stock then outstanding shall first receive, or simultaneously receive, a dividend on each outstanding share of Preferred Stock in an amount at least equal to the sum of (i) the amount of the Preferred Dividend then accrued on such share of Preferred Stock for the calendar year in which such dividends are being paid hereunder and not previously paid and (ii) (A) in the case of a dividend on common stock or any class or series that is convertible into common stock, that dividend per share of Preferred Stock as would equal the product of (l) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into common stock and (2) the number of shares of common stock issuable upon conversion of a share of such Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (B) in the case of a dividend on any class or series that is not convertible into common stock, at a rate per share of Preferred Stock determined by (1) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series) and (2) multiplying such fraction by an amount equal to the original issue price (see below) of such Preferred Stock; provided that, if the Company declares, pays or sets aside, on the same date, a dividend on shares of more than one class or series of capital stock of the Company, the dividend payable to the holders of a series of Preferred Stock shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest dividend to such series of Preferred Stock.

The original issue price shall mean $0.8976 per share of Series B Preferred, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred, $0.2392 per share of Series A Preferred, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred, and $0.3827 per share of Series A-2 Preferred, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A-2 Preferred.

Optional conversion rights

Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and non-assessable shares of common stock as is determined by dividing the original issue price of such share of Preferred Stock by the conversion price (as described below) of such share of Preferred Stock in effect at the time of conversion. The conversion price for each share of Preferred Stock shall initially be equal to the original issue price of such share of Preferred Stock. Such initial conversion price, and the rate at which shares of Preferred Stock may be converted into shares of common stock, is subject to adjustment.

Mandatory conversion rights

Upon either (a) an initial public offering valuing the company at least $275,000 and for total offering proceeds not less than $75,000 or (b) the date and time, or the occurrence of an event, specified by vote or written consent of (i) a majority of the then-outstanding shares of Series A Preferred and Series A-2 Preferred, voting as a single class and (b) a majority of the outstanding Series B Preferred Stock voting together as a single class, then all outstanding shares of Preferred Stock shall automatically be converted into shares of common stock, at the then effective conversion rate.

Liquidation

In the event of (i) any voluntary or involuntary liquidation, dissolution or winding up of the Company or (ii) the merger or consolidation of the Company or a subsidiary relinquishing a majority of the voting power of the capital stock, or the sale, lease, transfer, exclusive license or other disposition of all or substantially all assets of

the Company (Deemed Liquidation Event), the holders of shares of Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Company available for distribution to its stockholders before any payment shall be made to the holders of common stock by reason of their ownership thereof, an amount per share equal to the original issue price of such share of Preferred Stock, plus any dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Company or Deemed Liquidation Event, the assets of the Company available for distribution to its stockholders shall be insufficient to pay the holders of shares of Preferred Stock the full amount to which they shall be entitled, the holders of shares of Preferred Stock shall share ratably and on a *pari passu* basis in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company or Deemed Liquidation Event, after the payment of all preferential amounts required to be paid to the holders of shares of Preferred Stock the remaining assets of the Company available for distribution to its stockholders shall be distributed among the holders of the shares of Preferred Stock and common stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to common stock pursuant to the terms of the certificate of incorporation of the Company immediately prior to such liquidation, dissolution or winding up of the Company.

Anti-Dilution

Holders of convertible Preferred Stock are afforded certain anti-dilution protection with respect to corporate events such as stock splits and recapitalizations.

Redemption

The Company's convertible Preferred Stock is not redeemable except in the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company or a Deemed Liquidation Event, and unless elected otherwise by the requisite holders of Preferred Stock.

9. Common stock

In June 2014, the Company issued 5,000,000 shares of common stock to its two founders. The shares vest at a rate of 1/3 on the first anniversary date and in 36 equal monthly installments thereafter. Vested shares as of December 31, 2018 and 2017 were 5,000,000 and 4,444,444 shares, respectively. In July 2015, the Company issued 1,640,608 shares of common stock to CSHL in exchange for an exclusive license to a patent (Note 7).

The holders of record of the shares of common stock, exclusively and as a separate class, shall be entitled to elect two directors of the Company. The holders of the common stock and one Preferred Stock investor, voting together as a single class on an as-if-converted basis, shall be entitled to elect two directors and the holders of the common stock and the Preferred Stock, voting together as a single class on an as-if-converted basis, shall be entitled to elect one director.

10. 2014 equity incentive plan

In June 2014, the Company's board of directors and stockholders approved the 2014 Equity Incentive Plan (the 2014 Plan) under which it may grant incentive stock options, non-qualified stock options, restricted stock awards, unrestricted stock awards, or restricted stock units to purchase up to 6,756,555 shares of common stock to employees, officers, directors and consultants of the Company. In January 2018, the Company increased the number of shares of common stock reserved for issuance under the 2014 Plan to 45,706,365 shares.

In 2016, the Company granted options to purchase 5,087,712 shares of common stock to certain of its employees, and directors. The options vest over three to four years and are exercisable at a per share price equal to the fair value of the common stock on the grant date.

In 2017, the Company granted options to purchase 1,427,379 shares of common stock to certain of its employees and directors. The options vest over four years and are exercisable at a per share price equal to the fair value of the common stock on the grant date.

In 2018, the Company granted options to purchase 29,536,111 shares of common stock to certain of its employees, and directors. The options vest over four years and are exercisable at a per share price equal to the fair value of the common stock on the grant date.

As of December 31, 2018, there were 11,042,826 shares available for future issuance under the 2014 Plan.

As there is not a public market for the Company's common stock, the Company has determined the volatility for options granted in 2017 based on a study of reported data for a guideline group of companies that issued options with substantially similar terms. The risk-free interest rate is based on a zero-coupon United States Treasury instrument with terms consistent with the expected life of the stock options. The Company has not paid and does not anticipate paying cash dividends on shares of common stock; therefore, the expected dividend yield is assumed to be zero.

A summary of stock option activity for awards is presented below:

	Number of shares	Weighted average exercise price	Weighted average remaining contractual life (years)	Aggregate intrinsic value[1]
Outstanding as of December 31, 2016	4,993,022	$ 0.04	9.1	$ —
Granted	1,427,379	0.04		
Forfeited or expired	(596,644)	0.04		
Outstanding as of December 31, 2017	5,823,757	0.04	8.0	—
Granted	29,536,111	0.13		
Exercised	(570,286)	0.04		
Forfeited or expired	(126,052)	0.04		
Outstanding as of December 31, 2018	34,663,530	0.12	8.9	3,436
Exercisable as of December 31, 2018	8,867,025	0.06	8.1	1,437

(1) The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying options and the estimated fair value of the common stock for the options that were in the money at December 31, 2018 and 2017.

The weighted average grant date fair value per share of stock options granted during the years ended December 31, 2018 and 2017 was $0.08 and $0.04, respectively. The aggregate intrinsic value of stock options exercised during the year ended December 31, 2018 was $100.

The aggregate grant date fair value of stock options granted during the years ended December 31, 2018 and 2017 was approximately $2,335 and $57, respectively.

Stock-based compensation

The Company recorded stock-based compensation expense of $240 and $26 during the years ended December 31, 2018 and 2017, respectively. As of December 31, 2018, there was $1,986 of unrecognized compensation cost related to unvested stock-based compensation arrangements granted under the 2014 Plan.

The compensation is expected to be recognized over a weighted average period of 4 years as of December 31, 2018.

Stock-based compensation expense recorded as research and development and general and administrative expenses in the accompanying consolidated statements of operations is as follows:

	Year ended December 31,	
	2018	2017
Research and development	$ 117	$ 7
General and administrative	123	19
	$ 240	$ 26

The Company uses the Black-Scholes option pricing model to calculate the grant-date fair value of an award. The fair values of the options granted to employees and directors were calculated using the following assumptions for the year ended December 31, 2018:

	Year ended December 31,	
	2018	2017
Risk-free interest rate	2.67%—2.84%	2.27%
Expected dividend yield	0%	0%
Expected life	6.25—6.375 years	6.25—6.375 years
Expected volatility	57%—60%	65%

11. Net loss per share attributable to common stockholders

The following table summarizes the computation of basic and diluted net loss per share attributable to common stockholders of the Company:

	Year ended December 31,	
	2018	2017
Numerator:		
Net loss	$ (12,521)	$ (5,558)
Denominator:		
Weighted-average number of common shares, basic and diluted	7,056,159	6,665,733
Net loss per common share attributable to common stockholders, basic and diluted	$ (1.77)	$ (0.83)

The Company's potential dilutive securities, which include Preferred Stock and common stock options, have been excluded from the computation of diluted net loss per share as the effect would be anti-dilutive. Therefore, the weighted average number of common shares outstanding used to calculate both basic and diluted net loss per share attributable to common stockholders is the same. The Company excluded the following potential common shares, presented based on amounts outstanding at period end, from the computation of diluted net loss per share attributable to common stockholders for the period indicated because including them would have had an anti-dilutive effect:

	Year ended December 31,	
	2018	2017
Preferred Stock	225,584,874	49,540,132
Options to purchase common stock	34,663,530	5,823,757
	260,248,404	55,363,889

12. Income taxes

Among other provisions, the TCJA reduces the historical U.S. federal corporate income tax rate from a top rate of 35% to a newly enacted flat rate of 21% beginning January 1, 2018. At the date the new legislation is enacted, under ASC 740, *Income Taxes*, the Company is required to recognize the effects of the change in tax law and rates on its deferred tax assets and liabilities as a charge to income tax expense. As a result of the above TCJA and the revaluation of deferred tax assets and liabilities at December 31, 2017, the Company recognized a decrease in its deferred tax assets of $1,506. This reduction in the Company's deferred tax assets has been offset by a coinciding reduction in the associated valuation allowance, resulting in no additional tax expense.

A reconciliation of the expected income tax expense (benefit) computed using the federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year ended December 31,	
	2018	2017
Expected income tax benefit at the federal statutory rate	21.0	34.0
State income taxes, net of federal benefit	6.2	5.0
Non-deductible items	(0.3)	(1.7)
Research and development credit, net	0.9	6.7
Tax rate reductions due to the TCJA	0.0	(27.2)
Other	0.1	0.0
Change in valuation allowance	(27.9)	(16.8)
Total	0.0%	0.0%

The principal components of the Company's deferred tax assets and liabilities consist of the following:

	As of December 31,	
	2018	2017
Deferred tax assets:		
Federal and state net operating loss carryforwards	$ 6,637	$ 3,380
Research and development tax credits	778	654
Other	210	92
Gross deferred tax assets	7,625	4,126
Less: valuation allowance	(7,625)	(4,126)
Net deferred tax assets	$ —	$ —

As of December 31, 2018 and 2017, the Company had federal net operating loss carryforwards of $24,372 and $12,476, respectively, which may be available to reduce future taxable income, and expire at various dates beginning in 2034, for those net operating loss carryforwards generated prior to 2018. Net operating losses generated in 2018 and beyond have no expiration. As of December 31, 2018 and 2017, the Company had state net operating loss carry forwards of $24,030 and $12,293, respectively, which may be available to reduce future taxable income and expire at various dates beginning in 2034. In addition, at December 31, 2018 and 2017, the Company had federal research and development tax credit carryforwards of $443 and $172, respectively, and state research and development tax credit carry forwards of $425 and $241, respectively. Both federal and state research and development tax credit carry forwards may be available to reduce future tax liabilities and expire at various dates beginning in 2030. In accordance with Statement of ASC 740, *Accounting for Income Taxes*, management of the Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which are comprised principally of net operating loss carryforwards. Management has determined that it is more likely than not that the Company will not recognize the benefits of federal and state deferred tax assets and, as a result, a full valuation allowance of $7,625 and $4,126 was established at December 31, 2018 and 2017, respectively. The change in the valuation allowance was an increase of $3,499 and $932 in 2018 and 2017, respectively.

Utilization of the net operating loss carryforwards and research and development tax credit carryforwards may be subject to a substantial annual limitation under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code) due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. The Company has not conducted a formal study to assess whether a change of control has occurred or whether there have been multiple changes of control since inception due to the significant complexity and cost associated with such a study. If the Company has experienced a change of control, as defined for purposes of Section 382 and 383 of the Code, at any time since inception, utilization of the net operating loss carryforwards or research and development tax credit carryforwards may be subject to an annual limitation under Section 382 and 383 of the Code, which is determined by first multiplying the value of the Company's stock at the time of the ownership change by the applicable long-term tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the net operating loss carryforwards or research and development tax credit carryforwards before utilization.

The Company applies ASC 740 related to accounting for uncertainty in income taxes. The Company's reserves related to income taxes are based on a determination of whether, and how much of, a tax benefit taken by the Company in its tax filings or positions is more likely than not to be realized following resolution of any potential contingencies present related to the tax benefit. At December 31, 2018, and 2017 the Company had no

unrecognized tax benefits. Interest and penalty charges, if any, related to unrecognized tax benefits would be classified as income tax expense in the accompanying consolidated statements of operations.

13. Employee benefits

In 2016, the Company established a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code (the 401(k) Plan). The 401(k) Plan covers all employees who meet defined minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pretax basis. The Company is not required to make and has not made any contributions to the 401(k) Plan for the years ended December 31, 2018 and 2017.

14. Subsequent events

The Company has evaluated subsequent events through the issuance date of these consolidated financial statements.

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shares

Common stock

Prospectus

J.P. Morgan

Cowen

Credit Suisse

Canaccord Genuity

, 2019

PART II

Information not required in prospectus

Item 13. Other expenses of issuance and distribution.

The following table sets forth all costs and expenses, other than underwriting discounts and commissions, paid or payable by the Registrant in connection with the sale of the common stock being registered. All amounts shown are estimates except for the SEC registration fee, the FINRA filing fee and the Nasdaq listing fee:

	Amount paid or to be paid
SEC registration fee	$ *
FINRA filing fee	15,500
Nasdaq listing fee	*
Printing and engraving expenses	*
Legal fees, Blue Sky fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees and expenses	*
Miscellaneous expenses	*
Total	$ *

* To be completed by amendment.

Item 14. Indemnification of directors and officers.

Section 145 of the Delaware General Corporation Law, or DGCL, authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers under certain circumstances and subject to certain limitations. The terms of Section 145 of the DGCL are sufficiently broad to permit indemnification under certain circumstances for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended, or the Securities Act.

As permitted by the DGCL, the Registrant's restated certificate of incorporation to be effective in connection with the completion of this offering contains provisions that eliminate the personal liability of its directors for monetary damages for any breach of fiduciary duties as a director, except liability for the following:

- any breach of the director's duty of loyalty to the Registrant or its stockholders;
- acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;
- under Section 174 of the DGCL (regarding unlawful dividends and stock purchases); or
- any transaction from which the director derived an improper personal benefit.

As permitted by the DGCL, the Registrant's restated bylaws to be effective in connection with the completion of this offering, provide that:

- the Registrant is required to indemnify its directors and executive officers to the fullest extent permitted by the DGCL, subject to limited exceptions;
- the Registrant may indemnify its other employees and agents as set forth in the DGCL;

- the Registrant is required to advance expenses, as incurred, to its directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the DGCL, subject to limited exceptions; and
- the rights conferred in the restated bylaws are not exclusive.

Prior to the completion of this offering, the Registrant intends to enter into indemnification agreements with each of its current directors and executive officers to provide these directors and executive officers additional contractual assurances regarding the scope of the indemnification set forth in the Registrant's restated certificate of incorporation and restated bylaws and to provide additional procedural protections. There is no pending litigation or proceeding involving a director or executive officer of the Registrant for which indemnification is sought. Reference is also made to the underwriting agreement to be filed as Exhibit 1.1 to this registration statement, which provides for the indemnification of executive officers, directors and controlling persons of the Registrant against certain liabilities. The indemnification provisions in the Registrant's restated certificate of incorporation, restated bylaws and the indemnification agreements entered into or to be entered into between the Registrant and each of its directors and executive officers may be sufficiently broad to permit indemnification of the Registrant's directors and executive officers for liabilities arising under the Securities Act.

The Registrant has directors' and officers' liability insurance for securities matters.

Item 15. Recent sales of unregistered securities.

The following lists set forth information regarding all securities sold or granted by the Registrant from March 15, 2016 through March 15, 2019 that were not registered under the Securities Act, and the consideration, if any, received by the Registrant for such securities:

(a) Stock Option Grants

From March 15, 2016 through March 15, 2019, the Registrant has granted to its employees, directors, consultants and other service providers options to purchase an aggregate of 34,055,098 shares of common stock under its 2014 Equity Incentive Plan, or 2014 Plan, with exercise prices ranging from $0.04 to $0.22 per share.

From March 15, 2016 through March 15, 2019, employees, directors, consultants and other service providers of the Registrant exercised options granted under the 2014 Plan for an aggregate of 2,162,882 shares of common stock with exercise prices ranging from $0.04 to $0.22 per share for an aggregate exercise price of $97,702.

(b) Preferred Stock

In July 2016, the Registrant issued and sold an aggregate of 12,541,806 additional shares of Series A convertible preferred stock, at a purchase price of $0.2392 per share, for an aggregate purchase price of approximately $3 million. In February 2017, we sold an aggregate of 12,541,806 additional shares of our Series A convertible preferred stock, at a purchase price of $0.2392 per share, for an aggregate purchase price of approximately $3 million. Upon the completion of this offering, these shares of Series A convertible preferred stock will convert into 25,083,612 shares of common stock.

Between January and September 2018, the Registrant issued and sold to an investor an aggregate of 75,777,370 shares of Series A-2 convertible preferred stock, at a purchase price of $0.3827 per share, for an aggregate purchase price of $29,000,000. Upon the completion of this offering, these shares of Series A-2 convertible preferred stock will convert into 75,777,370 shares of common stock.

On October 22, 2018, the Registrant issued and sold to 14 investors an aggregate of 100,267,372 shares of Series B convertible preferred stock, at a purchase price of $0.8976 per share, for an aggregate purchase price of $89,999,994. Upon the completion of this offering, these shares of Series B convertible preferred stock will convert into 100,267,372 shares of common stock.

(c) Simple Agreement for Future Equity

In October 2017, we issued rights to purchase certain shares of our capital stock at a purchase price of $3,000,000, or Purchase Amount, pursuant to a Simple Agreement for Future Equity, or SAFE. The entire Purchase Amount and all other obligations under the SAFE converted into 7,839,038 shares of our Series A-2 convertible preferred stock in January 2018.

Unless otherwise stated, the sales of the above securities were deemed to be exempt from registration under the Securities Act in reliance on Section 4(a)(2) of the Securities Act (or Regulation D or Regulation S promulgated thereunder), or Rule 701 promulgated under Section 3(b) of the Securities Act, as transactions by an issuer not involving any public offering or pursuant to benefit plans and contracts relating to compensation as provided under Rule 701. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed on the stock certificates issued in each of the foregoing transactions.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions or any public offering, and the Registrant believes each transaction was exempt from the registration requirements of the Securities Act as stated above. All recipients of the foregoing transactions either received adequate information about the Registrant or had access, through their relationships with the Registrant, to such information. Furthermore, the Registrant affixed appropriate legends to the share certificates and instruments issued in each foregoing transaction setting forth that the securities had not been registered and the applicable restrictions on transfer.

Item 16. Exhibits and financial statement schedules.

(a) Exhibits.

Exhibit Number	Description of document
1.1*	Form of Underwriting Agreement.
3.1	Amended and Restated Certificate of Incorporation, as amended to date, as currently in effect.
3.2*	Form of Restated Certificate of Incorporation to be effective upon the completion of this offering.
3.3	Amended and Restated Bylaws, as amended to date, as currently in effect.
3.4*	Form of Restated Bylaws to be effective upon the completion of this offering.
4.1*	Form of Common Stock Certificate.
4.2	Amended and Restated Investors' Rights Agreement, dated October 22, 2018, by and among the Registrant and certain of its stockholders.
5.1*	Opinion of Fenwick & West LLP.
10.1*	Form of Indemnification Agreement with directors and officers.
10.2	2014 Equity Incentive Plan, as amended, and forms of award agreements.
10.4*	2019 Equity Incentive Plan, to become effective on the date immediately prior to the date the registration statement is declared effective, and forms of award agreements.
10.5*	Lease Agreement, dated August 20, 2018, by and between Homology Medicines, Inc., and the Registrant.
10.6	Lease Agreement dated January 2, 2019, by and between MIT 139 Main Street Leasehold LLC., and the Registrant.
10.7*	License Agreement, dated July 31, 2015, by and between Cold Spring Harbor Laboratory and the Registrant.
10.8*	License Agreement, dated April 18, 2016, by and between the University of Southampton and the Registrant.
10.9*	Employment Agreement, dated October 20, 2017, by and between the Registrant and Edward M. Kaye.
10.10*	Employment Agreement, dated November 20, 2015, by and between the Registrant and Huw M. Nash.
10.11*	Employment Agreement, dated September 11, 2017, by and between the Registrant and Barry J. Ticho.
10.12*	Employment Agreement, dated January 16, 2018, by and between the Registrant and Gene Liau.
10.13*	Employment Agreement, dated February 12, 2019, by and between the Registrant and Stephen J. Tulipano.
10.14*	Consulting Agreement, dated October 24, 2014, by and between the Registrant and Adrian R. Krainer.
21.1	Subsidiaries of the Registrant.
23.1*	Consent of KPMG, an independent registered public accounting firm.
23.2*	Consent of Fenwick & West LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included in the signature page to this registration statement).

* To be filed by amendment.

(b) Financial Statement Schedules.

No financial statement schedules are provided because the information called for is not required or is shown either in the financial statements or notes.

Item 17. Undertakings.

The undersigned Registrant hereby undertakes to provide to the underwriters at the completion specified in the underwriting agreement, certificates in such denominations and registered in such names as required by the underwriters to permit prompt delivery to each purchaser.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned Registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Signatures

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant has duly caused this registration statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Bedford, State of Massachusetts, on the day of , 2019.

STOKE THERAPEUTICS, INC.

By: _____
Edward M. Kaye, M.D.
Chief Executive Officer

Power of attorney

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Edward M. Kaye and Stephen J. Tulipano, and each of them, as his true and lawful attorneys-in-fact, proxies and agents, each with full power of substitution and resubstitution and full power to act without the other, for him in any and all capacities, to sign any and all amendments to this registration statement (including post-effective amendments or any abbreviated registration statement and any amendments thereto filed pursuant to Rule 462(b) increasing the number of securities for which registration is sought), and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact, proxies and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, proxies and agents, or their or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
Edward M. Kaye, M.D.	Chief Executive Officer (Principal Executive Officer)	, 2019
Stephen J. Tulipano	Chief Financial Officer (Principal Accounting and Financial Officer)	, 2019
Samuel W. Hall, Ph.D.	Director	, 2019
Seth L. Harrison, M.D.	Director	, 2019
Adrian R. Krainer, Ph.D.	Director	, 2019
Arthur A. Levin, Ph.D.	Director	, 2019
Arthur O. Tzianabos, Ph.D.	Director	, 2019

EXHIBIT 3.1

AMENDED AND RESTATED CERTIFICATE OF INCORPORATION

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
STOKE THERAPEUTICS, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

Stoke Therapeutics, Inc., a corporation organized and existing under and by virtue of the provisions of the General Corporation Law of the State of Delaware (the "**General Corporation Law**"),

DOES HEREBY CERTIFY:

1. That the name of this corporation is Stoke Therapeutics, Inc., and that this corporation was originally incorporated pursuant to the General Corporation Law upon the filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware on June 13, 2014 under the name ASOthera Pharmaceuticals, Inc.

2. That the Board of Directors duly adopted resolutions proposing to amend and restate the Amended and Restated Certificate of Incorporation of this corporation, declaring said amendment and restatement to be advisable and in the best interests of this corporation and its stockholders, and authorizing the appropriate officers of this corporation to solicit the consent of the stockholders therefor, which resolution setting forth the proposed amendment and restatement is as follows:

RESOLVED, that the Amended and Restated Certificate of Incorporation of this corporation be amended and restated in its entirety to read as follows:

FIRST: The name of this corporation is Stoke Therapeutics, Inc. (the "**Corporation**").

SECOND: The address of the registered office of the Corporation in the State of Delaware is 3500 South Dupont Highway, in the City of Dover, County of Kent 19901. The name of its registered agent at such address is Incorporating Services, Ltd.

THIRD: The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law.

FOURTH: The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 278,527,249 shares of Common Stock, $0.0001 par value per share ("**Common Stock**") and (ii) 225,584,874 shares of Preferred Stock, $0.0001 par value per share ("**Preferred Stock**").

The following is a statement of the designations and the powers, privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK

1. General. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights, powers and preferences of the holders of the Preferred Stock set forth herein.

2. Voting. The holders of the Common Stock are entitled to one vote for each share of Common Stock held at all meetings of stockholders (and written actions in lieu of meetings); provided, however, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to the certificate of incorporation of the Corporation that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to the certificate of incorporation of the Corporation or pursuant to the General Corporation Law. The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by (in addition to any vote of the holders of one or more series of Preferred Stock that may be required by the terms of the certificate of incorporation of the Corporation) the affirmative vote of the holders of shares of capital stock of the Corporation representing a majority of the votes represented by all outstanding shares of capital stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law.

B. PREFERRED STOCK

49,540,132 shares of the authorized Preferred Stock of the Corporation are designated "**Series A Preferred Stock**," 75,777,370 shares of the authorized Preferred Stock of the Corporation are designated "**Series A-2 Preferred Stock**" and 100,267,372 shares of the authorized Preferred Stock of the corporation are designated "**Series B Preferred Stock**," each with the following rights, preferences, powers, privileges and restrictions, qualifications and limitations. Unless otherwise indicated, references to "sections" or "subsections" in this Part B of this Article Fourth refer to sections and subsections of Part B of this Article Fourth.

1. Dividends.

From and after the date of the issuance of any shares of any series of Preferred Stock, the holders of such shares of Preferred Stock shall be entitled to receive non-cumulative dividends at the rate of eight percent of the Original Issue Price (as defined below) of such series of such Preferred Stock per annum on such shares of Preferred Stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Preferred Stock) when, as, and if declared by the Board of Directors (the "**Preferred Dividend**").

The Corporation shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Corporation (other than dividends on shares of Common Stock payable in shares of Common Stock) unless (in addition to the obtaining of any consents required elsewhere in the certificate of incorporation of the Corporation) the holders of the Preferred Stock then outstanding shall first receive, or simultaneously receive, a dividend on each outstanding share of Preferred Stock in an amount at least equal to the sum of (i) the amount of the Preferred Dividend then accrued on such share of Preferred Stock for the calendar year in which such dividends are being paid hereunder and not previously paid and (ii) (A) in the case of a dividend on Common Stock or any class or series that is convertible into Common Stock, that dividend per share of Preferred Stock as would equal the product of (1) the dividend payable on each share of such class or series determined, if applicable, as if all shares of such class or series had been converted into Common Stock and (2) the number of shares of Common Stock issuable upon conversion of a share of such Preferred Stock, in each case calculated on the record date for determination of holders entitled to receive such dividend or (B) in the case of a dividend on any class or series that is not convertible into Common Stock, at a rate per share of Preferred Stock determined by (1) dividing the amount of the dividend payable on each share of such class or series of capital stock by the original issuance price of such class or series of capital stock (subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to such class or series) and (2) multiplying such fraction by an amount equal to the Original Issue Price (as defined below) of such Preferred Stock; provided that, if the Corporation declares, pays or sets aside, on

the same date, a dividend on shares of more than one class or series of capital stock of the Corporation, the dividend payable to the holders of a series of Preferred Stock pursuant to this Section 1 shall be calculated based upon the dividend on the class or series of capital stock that would result in the highest dividend to such series of Preferred Stock. The " **Original Issue Price**" shall mean $0.8976 per share of Series B Preferred Stock, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series B Preferred Stock, $0.2392 per share of Series A Preferred Stock, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A Preferred Stock, and $0.3827 per share of Series A-2 Preferred Stock, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A-2 Preferred Stock.

2. Liquidation, Dissolution or Winding Up; Certain Mergers, Consolidations and Asset Sales.

2.1 Preferential Payments to Holders of Preferred Stock. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the holders of shares of Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders before any payment shall be made to the holders of Common Stock by reason of their ownership thereof, an amount per share equal to the Original Issue Price of such share of Preferred Stock, plus any dividends declared but unpaid thereon. If upon any such liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, the assets of the Corporation available for distribution to its stockholders shall be insufficient to pay the holders of shares of Preferred Stock the full amount to which they shall be entitled under this Subsection 2.1, the holders of shares of Preferred Stock shall share ratably and on a pari passu basis in any distribution of the assets available for distribution in proportion to the respective amounts which would otherwise be payable in respect of the shares held by them upon such distribution if all amounts payable on or with respect to such shares were paid in full.

2.2 Distribution of Remaining Assets. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Corporation or Deemed Liquidation Event, after the payment of all preferential amounts required to be paid to the holders of shares of Preferred Stock the remaining assets of the Corporation available for distribution to its stockholders shall be distributed among the holders of the shares of Preferred Stock and Common Stock, pro rata based on the number of shares held by each such holder, treating for this purpose all such securities as if they had been converted to Common Stock pursuant to the terms of the certificate of incorporation of the Corporation immediately prior to such liquidation, dissolution or winding up of the Corporation. The aggregate amount which a holder of a share of Preferred Stock is entitled to receive under Subsections 2.1 and 2.2 is hereinafter referred to as the "**Preferred Stock Liquidation Amount**."

2.3 Deemed Liquidation Events.

2.3.1 Definition. Each of the following events shall be considered a "**Deemed Liquidation Event**" unless the holders of (i) a majority of the then-outstanding shares of Series A Preferred Stock and Series A-2 Preferred Stock, voting as a single class and (ii) a majority of the outstanding Series B Preferred Stock voting together as a single class (clauses (i) and (ii) collectively, the "**Requisite Holders**") elect otherwise by written notice sent to the Corporation at least 10 days prior to the effective date of any such event:

(a) a merger or consolidation in which

(i) the Corporation is a constituent party or

(ii) a subsidiary of the Corporation is a constituent party and the Corporation issues shares of its capital stock pursuant to such merger or consolidation,

except any such merger or consolidation involving the Corporation or a subsidiary in which the shares of capital stock of the Corporation outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power, of the capital stock of (1) the surviving or resulting corporation; or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation; or

(b) the sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Corporation or any subsidiary of the Corporation of all or substantially all the assets of the Corporation and its subsidiaries taken as a whole, or the sale or disposition (whether by merger, consolidation or otherwise) of one or more subsidiaries of the Corporation if substantially all of the assets of the Corporation and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license or other disposition is to a wholly owned subsidiary of the Corporation.

2.3.2 Effecting a Deemed Liquidation Event.

(a) The Corporation shall not have the power to effect a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(i) unless the agreement or plan of merger or consolidation for such transaction (the "**Merger Agreement**") provides that the consideration payable to the stockholders of the Corporation shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2.

(b) In the event of a Deemed Liquidation Event referred to in Subsection 2.3.1(a)(ii) or 2.3.1(b), if the Corporation does not effect a dissolution of the Corporation under the General Corporation Law within 90 days after such Deemed Liquidation Event, then (i) the Corporation shall send a written notice to each holder of Preferred Stock no later than the 90th day after the Deemed Liquidation Event advising such holders of their right (and the requirements to be met to secure such right) pursuant to the terms of the following clause; (ii) to require the redemption of such shares of Preferred Stock, and (iii) if the holders of at least a majority of the then outstanding shares of Preferred Stock so request in a written instrument delivered to the Corporation not later than 120 days after such Deemed Liquidation Event, the Corporation shall use the consideration received by the Corporation for such Deemed Liquidation Event (net of any retained liabilities associated with the assets sold or technology licensed, as determined in good faith by the Board of Directors of the Corporation)**,** together with any other assets of the Corporation available for distribution to its stockholders, all to the extent permitted by Delaware law governing distributions to stockholders (the "**Available Proceeds**"), on the 150th day after such Deemed Liquidation Event, to redeem each outstanding share of Preferred Stock at a price per share equal to the respective Preferred Stock Liquidation Amount of such share of Preferred Stock. Notwithstanding the foregoing, in the event of a redemption pursuant to the preceding sentence, if the Available Proceeds are not sufficient to redeem all outstanding shares of Preferred Stock, the Corporation shall ratably and on a pari passu basis redeem each holder's shares of Preferred Stock to the fullest extent of such Available Proceeds, and shall redeem the remaining shares as soon as it may lawfully do so under Delaware law governing distributions to stockholders. Prior to the distribution or redemption provided for in this Subsection 2.3.2(b), the Corporation shall not expend or dissipate the consideration received for such Deemed Liquidation Event, except to discharge expenses incurred in connection with such Deemed Liquidation Event or in the ordinary course of business.

2.3.3 Amount Deemed Paid or Distributed. The amount deemed paid or distributed to the holders of capital stock of the Corporation upon any such merger, consolidation, sale, transfer, exclusive license, other disposition or redemption shall be the cash or the value of the property, rights or securities paid or distributed to such holders by the Corporation or the acquiring person, firm or other entity. The value of such property, rights or securities shall be determined in good faith by the Board of Directors of the Corporation.

2.3.4 Allocation of Escrow and Contingent Consideration. In the event of a Deemed Liquidation Event pursuant to Subsection 2.3.1(a)(i), if any portion of the consideration payable to the stockholders of the Corporation is payable only upon satisfaction of contingencies (the "**Additional Consideration**"), the Merger Agreement shall provide that (a) the portion of such consideration that is not Additional Consideration (such portion, the "**Initial Consideration**") shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 as if the Initial Consideration were the only consideration payable in connection with such Deemed Liquidation Event; and (b) any Additional Consideration which becomes payable to the stockholders of the Corporation upon satisfaction of such contingencies shall be allocated among the holders of capital stock of the Corporation in accordance with Subsections 2.1 and 2.2 after taking into account the previous payment of the Initial Consideration as part of the same transaction. For the purposes of this Subsection 2.3.4, consideration placed into escrow or retained as holdback to be available for satisfaction of indemnification or similar obligations in connection with such Deemed Liquidation Event shall be deemed to be Additional Consideration.

3. Voting.

3.1 General. On any matter presented to the stockholders of the Corporation for their action or consideration at any meeting of stockholders of the Corporation (or by written consent of stockholders in lieu of meeting), each holder of outstanding shares of Preferred Stock shall be entitled to cast the number of votes equal to the number of whole shares of Common Stock into which the shares of Preferred Stock held by such holder are convertible as of the record date for determining stockholders entitled to vote on such matter. Except as provided by law or by the other provisions of the certificate of incorporation of the Corporation, holders of Preferred Stock shall vote together with the holders of Common Stock as a single class.

3.2 Election of Directors.

3.2.1 General. At any meeting held for the purpose of electing a director, the presence in person or by proxy of the holders of a majority of the outstanding shares of the class or series entitled to elect such director shall constitute a quorum for the purpose of electing such director. Except as otherwise provided in this Subsection 3.2, a vacancy in any directorship filled by the holders of any class or series shall be filled only by vote or written consent in lieu of a meeting of the holders of such class or series or by any remaining director or directors elected by the holders of such class or series pursuant to this Subsection 3.2.

3.2.2 Common Directors. The holders of record of the shares of Common Stock, exclusively and as a separate class, shall be entitled to elect two directors of the Corporation (the "**Common Directors**"). If the holders of shares of Common Stock fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3.2.2, then any directorship not so filled shall remain vacant until such time as the holders of the Common Stock elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than by the stockholders of the Corporation that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class.

3.2.3 Preferred Directors. For so long as any shares of Preferred Stock remain outstanding, the holders of record of the shares of Preferred Stock, exclusively and as a separate class, shall be entitled to elect two directors of the Corporation (the "**Preferred Directors**"). If the holders of shares of Preferred Stock fail to elect a sufficient number of directors to fill all directorships for which they are entitled to elect directors, voting exclusively and as a separate class, pursuant to the first sentence of this Subsection 3.2.3, then any directorship not so filled shall remain vacant until such time as the holders of the Preferred Stock elect a person to fill such directorship by vote or written consent in lieu of a meeting; and no such directorship may be filled by stockholders of the Corporation other than by the stockholders of the Corporation that are entitled to elect a person to fill such directorship, voting exclusively and as a separate class.

3.2.4 Remaining Directors. The holders of the Common Stock and the Preferred Stock, voting together as a single class on an as-if-converted basis, shall be entitled to elect all remaining directors at each meeting or pursuant to each consent of the Company's stockholders for the election of directors (the "**Remaining Directors**"). Notwithstanding anything to the contrary provided herein, if any vacancy in the office of any Remaining Director exists, such vacancy may be filled (either contingently or otherwise) by the stockholders as specified in this Section 3.2.4 or by at least a majority of the members of the Board then in office, although less than a quorum, or by a sole remaining member of the Board then in office, even if such directors or such sole remaining director were not elected by the holders of the class, classes or series that are entitled to elect a director or directors to office under the provisions of this Section 3.2.4 and such electing director or directors shall specify at the time of such election the specific vacant directorship being filled.

3.2.5 Removal of Directors. Any director elected as provided in the Subsections 3.2.1, 3.2.2 or 3.3.3 may be removed without cause by, and only by, the affirmative vote of the holders of the shares of the class or series of capital stock entitled to elect such director or directors, given either at a special meeting of such stockholders duly called for that purpose or pursuant to a written consent of stockholders.

3.3 Preferred Stock Protective Provisions. For so long as any shares of Preferred Stock remain outstanding, the Corporation shall not, either directly or indirectly by amendment, merger, consolidation or otherwise, do any of the following without (in addition to any other vote required by law or the certificate of incorporation of the Corporation) the written consent or affirmative vote of the Requisite Holders, given in writing or by vote at a meeting, and any such act or transaction entered into without such consent or vote shall be null and void *ab initio*, and of no force or effect.

3.3.1 liquidate, dissolve or wind-up the business and affairs of the Corporation, effect any merger or consolidation, any asset transfer, or any license of intellectual property out of the ordinary course of business, any acquisition or any other Deemed Liquidation Event, or consent to any of the foregoing;

3.3.2 amend, alter or repeal any provision of the certificate of incorporation or bylaws of the Corporation;

3.3.3 create, or authorize the creation of, or issue or obligate itself to issue shares of, any additional class or series of capital stock unless the same ranks junior to the Preferred Stock with respect to Liquidation Preference, the payment of dividends, rights of redemption and voting, or increase the authorized number of shares of Preferred Stock or increase the authorized number of shares of any additional class or series of capital stock unless the same ranks junior to the Preferred Stock with respect to Liquidation Preference, the payment of dividends, rights of redemption and voting;

3.3.4 (i) reclassify, alter or amend any existing security of the Corporation that is pari passu with the Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to the Preferred Stock in respect of any such right, preference, or privilege or (ii) reclassify, alter or amend any existing security of the Corporation that is junior to the Preferred Stock in respect of the distribution of assets on the liquidation, dissolution or winding up of the Corporation, the payment of dividends or rights of redemption, if such reclassification, alteration or amendment would render such other security senior to or pari passu with the Preferred Stock in respect of any such right, preference or privilege;

3.3.5 purchase or redeem (or permit any subsidiary to purchase or redeem) or pay or declare any dividend or make any distribution on, any shares of capital stock of the Corporation other than (i) redemptions of or dividends or distributions on the Preferred Stock as expressly authorized herein and (ii) repurchases of stock from former employees, officers, directors, consultants or other persons who performed services for the Corporation or any subsidiary in connection with the cessation of such employment or service at the lower of the original purchase price or the then-current fair market value thereof;

3.3.6 create, or authorize the creation of, or issue, or authorize the issuance of any debt security, or permit any subsidiary to take any such action with respect to any debt security, if the aggregate indebtedness of the Corporation and its subsidiaries for borrowed money following such action would exceed $100,000 unless such debt security has received the prior approval of the Board of Directors;

3.3.7 increase the authorized number of shares of Preferred Stock or Common Stock;

3.3.8 increase or decrease the authorized number of or method of selecting directors constituting the Board of Directors; or

3.3.9 enter into any interested party transaction (other than transactions that (i) involve payment obligations of, or payments to, the Corporation of immaterial amounts or (ii) do not involve any exchange of cash or other property, in each case, in the ordinary course of business), unless approved by the Board of Directors (including a disinterested majority of directors).

4. Optional Conversion.

The holders of the Preferred Stock shall have conversion rights as follows (the "**Conversion Rights**"):

4.1 Right to Convert.

4.1.1 Conversion Ratio. Each share of Preferred Stock shall be convertible, at the option of the holder thereof, at any time and from time to time, and without the payment of additional consideration by the holder thereof, into such number of fully paid and non-assessable shares of Common Stock as is determined by dividing the Original Issue Price of such share of Preferred Stock by the Conversion Price (as defined below) of such share of Preferred Stock in effect at the time of conversion. The "**Conversion Price**" for each share of Preferred Stock shall initially be equal to the Original Issue Price of such share of Preferred Stock; for the sake of clarity, any reference to "Conversion Price" herein refers to the respective Conversion Price of each series of Preferred Stock. Such initial Conversion Price, and the rate at which shares of Preferred Stock may be converted into shares of Common Stock, shall be subject to adjustment as provided below.

4.1.2 Termination of Conversion Rights. In the event of a liquidation, dissolution or winding up of the Corporation or a Deemed Liquidation Event, the Conversion Rights shall terminate at the close of business on the last full day preceding the date fixed for the payment of any such amounts distributable on such event to the holders of Preferred Stock.

4.2 Fractional Shares. No fractional shares of Common Stock shall be issued upon conversion of the Preferred Stock. In lieu of any fractional shares to which the holder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the fair market value of a share of Common Stock as determined in good faith by the Board of Directors of the Corporation. Whether or not fractional shares would be issuable upon such conversion shall be determined on the basis of the total number of shares of Preferred Stock the holder is at the time converting into Common Stock and the aggregate number of shares of Common Stock issuable upon such conversion.

4.3 Mechanics of Conversion.

4.3.1 Notice of Conversion. In order for a holder of Preferred Stock to voluntarily convert shares of Preferred Stock into shares of Common Stock, such holder shall (a) provide written notice to the Corporation's transfer agent at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent) that such holder elects to convert all or any number of such holder's shares of Preferred Stock and, if applicable, any event on which such conversion is contingent and (b), if such holder's shares are certificated, surrender the certificate or certificates for such shares of Preferred Stock (or, if such registered holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate), at the office of the transfer agent for the Preferred Stock (or at the principal office of the Corporation if the Corporation serves as its own transfer agent). Such notice shall state such holder's name or the names of the nominees in which such holder wishes the shares of Common Stock to be issued. If required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by a written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or his, her or its attorney duly authorized in writing. The close of business on the date of receipt by the transfer agent (or by the Corporation if the Corporation serves as its own transfer agent) of such notice and, if applicable, certificates (or lost certificate affidavit and agreement) shall be the time of conversion (the "**Conversion Time**"), and the shares of Common Stock issuable upon conversion of the specified shares shall be deemed to be outstanding of record as of such date. The Corporation shall, as soon as practicable after the Conversion Time (i) issue and deliver to such holder of Preferred Stock, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable upon such conversion in accordance with the provisions hereof and a certificate for the number (if any) of the shares of Preferred Stock represented by the surrendered certificate that were not converted into Common Stock, (ii) pay in cash such amount as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and (iii) pay all declared but unpaid dividends on the shares of Preferred Stock converted.

4.3.2 Reservation of Shares. The Corporation shall at all times when the Preferred Stock shall be outstanding, reserve and keep available out of its authorized but unissued capital stock, for the purpose of effecting the conversion of the Preferred Stock, such number of its duly authorized shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding Preferred Stock; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the conversion of all then outstanding shares of the Preferred Stock, the Corporation shall take such corporate action as may be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes,

including, without limitation, engaging in best efforts to obtain the requisite stockholder approval of any necessary amendment to the certificate of incorporation of the Corporation. Before taking any action which would cause an adjustment reducing the Conversion Price below the then par value of the shares of Common Stock issuable upon conversion of the Preferred Stock, the Corporation will take any corporate action which may, in the opinion of its counsel, be necessary in order that the Corporation may validly and legally issue fully paid and non-assessable shares of Common Stock at such adjusted Conversion Price.

4.3.3 Effect of Conversion. All shares of Preferred Stock which shall have been surrendered for conversion as herein provided shall no longer be deemed to be outstanding and all rights with respect to such shares shall immediately cease and terminate at the Conversion Time, except only the right of the holders thereof to receive shares of Common Stock in exchange therefor, to receive payment in lieu of any fraction of a share otherwise issuable upon such conversion as provided in Subsection 4.2 and to receive payment of any dividends declared but unpaid thereon. Any shares of Preferred Stock so converted shall be retired and cancelled and may not be reissued as shares of Preferred Stock, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock and the authorized number of shares of the applicable series of Preferred Stock accordingly.

4.3.4 No Further Adjustment. Upon any such conversion, no adjustment to the Conversion Price shall be made for any declared but unpaid dividends on the Preferred Stock surrendered for conversion or on the Common Stock delivered upon conversion.

4.3.5 Taxes. The Corporation shall pay any and all issue and other similar taxes that may be payable in respect of any issuance or delivery of shares of Common Stock upon conversion of shares of Preferred Stock pursuant to this Section 4. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issuance and delivery of shares of Common Stock in a name other than that in which the shares of Preferred Stock so converted were registered, and no such issuance or delivery shall be made unless and until the person or entity requesting such issuance has paid to the Corporation the amount of any such tax or has established, to the satisfaction of the Corporation, that such tax has been paid.

4.4 Adjustments to Conversion Price for Diluting Issues.

4.4.1 Special Definitions. For purposes of this Article Fourth, the following definitions shall apply:

(a) "**Option**" shall mean rights, options or warrants to subscribe for, purchase or otherwise acquire Common Stock or Convertible Securities.

(b) "**Original Issue Date**" shall mean the date on which the first share of Series B Preferred Stock was issued.

(c) "**Convertible Securities**" shall mean any evidences of indebtedness, shares or other securities directly or indirectly convertible into or exchangeable for Common Stock, but excluding Options.

(d) "**Additional Shares of Common Stock**" shall mean all shares of Common Stock issued (or, pursuant to Subsection 4.4.3 below, deemed to be issued) by the Corporation after the Original Issue Date, other than (1) the following shares of Common Stock and (2) shares of Common Stock deemed issued pursuant to the following Options and Convertible Securities (clauses (1) and (2), collectively, "**Exempted Securities**"):

(i) shares of Common Stock, Options or Convertible Securities issued as a dividend or distribution on Preferred Stock;

(ii) shares of Common Stock, Options or Convertible Securities issued by reason of a dividend, stock split, split-up or other distribution on shares of Common Stock that is covered by Subsection 4.5, 4.6, 4.7 or 4.8**;**

(iii) shares of Common Stock or Options issued to employees or directors of, or consultants or advisors to, the Corporation or any of its subsidiaries pursuant to a plan, agreement or arrangement approved by the Board of Directors of the Corporation, including the Preferred Directors;

(iv) shares of Common Stock or Convertible Securities actually issued upon the exercise of Options or shares of Common Stock actually issued upon the conversion or exchange of Convertible Securities, in each case provided such issuance is pursuant to the terms of such Option or Convertible Security;

(v) shares of Common Stock, Options or Convertible Securities issued to banks, equipment lessors or other financial institutions, or to real property lessors, pursuant to a debt financing, equipment leasing or real property leasing transaction approved by the Board of Directors of the Corporation, including the Preferred Directors;

(vi) shares of Common Stock, Options or Convertible Securities issued to suppliers or third party service providers in connection with the provision of goods or services pursuant to transactions approved by the Board of Directors of the Corporation, including the Preferred Directors;

(vii) shares of Common Stock, Options or Convertible Securities issued in to entities in connection with joint ventures, development projects, acquisitions, or other strategic transaction, provided that such issuances are approved by the Board of Directors of the Corporation, including the Preferred Directors;

(viii) shares of Common Stock issued upon the closing of a firmly underwritten public offering of shares of Common Stock of the Company pursuant to a registration statement under the Securities Act of 1933 at a pre-money valuation of at least $275,000,000 and for a total offering of not less than $75,000,000 (before deduction of underwriters commissions and expenses) (a "**Qualified IPO**"); or

(ix) any other shares of Common Stock, Options or Convertible Securities issued upon the written consent of the holders of at least a majority of the then outstanding shares of Preferred Stock, voting together as a single class on an as-converted basis, that such shares of Common Stock, Options or Convertible Securities shall not constitute Additional Shares of Common Stock.

4.4.2 No Adjustment of Conversion Price. No adjustment in the Conversion Price of a particular series of Preferred Stock shall be made as the result of the issuance or deemed issuance of Additional Shares of Common Stock if the Corporation receives written notice from the holders of at least a majority of the then outstanding shares of such series of Preferred Stock agreeing that no such adjustment shall be made as the result of the issuance or deemed issuance of such Additional Shares of Common Stock.

4.4.3 Deemed Issue of Additional Shares of Common Stock.

(a) If the Corporation at any time or from time to time after the Original Issue Date shall issue any Options or Convertible Securities (excluding Options or Convertible Securities which are themselves Exempted Securities) or shall fix a record date for the determination of holders of any class of securities entitled to receive any such Options or Convertible Securities, then the maximum number of shares of Common Stock (as set forth in the instrument relating thereto, assuming the satisfaction of any conditions to exercisability, convertibility or exchangeability but without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or, in the case of Convertible Securities and Options therefor, the conversion or exchange of such Convertible Securities, shall be deemed to be Additional Shares of Common Stock issued as of the time of such issue or, in case such a record date shall have been fixed, as of the close of business on such record date.

(b) If the terms of any Option or Convertible Security, the issuance of which resulted in an adjustment to the Conversion Price pursuant to the terms of Subsection 4.4.4, are revised as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase or decrease in the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any such Option or Convertible Security or (2) any increase or decrease in the consideration payable to the Corporation upon such exercise, conversion and/or exchange, then, effective upon such increase or decrease becoming effective, the Conversion Price computed upon the original issue of such Option or Convertible Security (or upon the occurrence of a record date with respect thereto) shall be readjusted to such Conversion Price as would have obtained had such revised

terms been in effect upon the original date of issuance of such Option or Convertible Security. Notwithstanding the foregoing, no readjustment pursuant to this clause (b) shall have the effect of increasing the Conversion Price to an amount which exceeds the lower of (i) the Conversion Price in effect immediately prior to the original adjustment made as a result of the issuance of such Option or Convertible Security, or (ii) the Conversion Price that would have resulted from any issuances of Additional Shares of Common Stock (other than deemed issuances of Additional Shares of Common Stock as a result of the issuance of such Option or Convertible Security) between the original adjustment date and such readjustment date.

(c) If the terms of any Option or Convertible Security (excluding Options or Convertible Securities which are themselves Exempted Securities), the issuance of which did not result in an adjustment to the Conversion Price pursuant to the terms of Subsection 4.4.4 (either because the consideration per share (determined pursuant to Subsection 4.4.5) of the Additional Shares of Common Stock subject thereto was equal to or greater than the Conversion Price then in effect, or because such Option or Convertible Security was issued before the Original Issue Date), are revised after the Original Issue Date as a result of an amendment to such terms or any other adjustment pursuant to the provisions of such Option or Convertible Security (but excluding automatic adjustments to such terms pursuant to anti-dilution or similar provisions of such Option or Convertible Security) to provide for either (1) any increase in the number of shares of Common Stock issuable upon the exercise, conversion or exchange of any such Option or Convertible Security or (2) any decrease in the consideration payable to the Corporation upon such exercise, conversion or exchange, then such Option or Convertible Security, as so amended or adjusted, and the Additional Shares of Common Stock subject thereto (determined in the manner provided in Subsection 4.4.3(a)) shall be deemed to have been issued effective upon such increase or decrease becoming effective.

(d) Upon the expiration or termination of any unexercised Option or unconverted or unexchanged Convertible Security (or portion thereof) which resulted (either upon its original issuance or upon a revision of its terms) in an adjustment to the Conversion Price pursuant to the terms of Subsection 4.4.4, the Conversion Price shall be readjusted to such Conversion Price as would have obtained had such Option or Convertible Security (or portion thereof) never been issued.

(e) If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, is calculable at the time such Option or Convertible Security is issued or amended but is subject to adjustment based upon subsequent events, any adjustment to the Conversion Price provided for in this Subsection 4.4.3 shall be effected at the time of such issuance or amendment based on such number of shares or amount of consideration without regard to any provisions for subsequent adjustments (and any subsequent adjustments shall be treated as provided in clauses (b) and (c) of this Subsection 4.4.3). If the number of shares of Common Stock issuable upon the exercise, conversion and/or exchange of any Option or Convertible Security, or the consideration payable to the Corporation upon such exercise, conversion and/or exchange, cannot be calculated at all at the time such Option or Convertible Security is issued or amended, any adjustment to the Conversion Price that would result under the terms of this Subsection 4.4.3 at the time of such issuance or amendment shall instead be effected at the time such number of shares and/or amount of consideration is first calculable (even if subject to subsequent adjustments), assuming for purposes of calculating such adjustment to the Conversion Price that such issuance or amendment took place at the time such calculation can first be made.

4.4.4 Adjustment of Conversion Price Upon Issuance of Additional Shares of Common Stock. In the event the Corporation shall at any time after the Original Issue Date issue Additional Shares of Common Stock (including Additional Shares of Common Stock deemed to be

issued pursuant to Subsection 4.4.3), without consideration or for a consideration per share less than the Conversion Price of any series of Preferred Stock in effect immediately prior to such issue, then such Conversion Price for such series of Preferred Stock shall be reduced, concurrently with such issue, to a price (calculated to the nearest one-hundredth of a cent) determined in accordance with the following formula:

$$CP_2 = CP_1 * (A + B) \div (A + C).$$

For purposes of the foregoing formula, the following definitions shall apply:

(a) "CP_2" shall mean the Conversion Price in effect immediately after such issue of Additional Shares of Common Stock

(b) "CP_1" shall mean the Conversion Price in effect immediately prior to such issue of Additional Shares of Common Stock;

(c) "A" shall mean the number of shares of Common Stock outstanding immediately prior to such issue of Additional Shares of Common Stock (treating for this purpose as outstanding all shares of Common Stock issuable upon exercise of Options outstanding immediately prior to such issue or upon conversion or exchange of Convertible Securities (including the Preferred Stock) outstanding (assuming exercise of any outstanding Options therefor) immediately prior to such issue);

(d) "B" shall mean the number of shares of Common Stock that would have been issued if such Additional Shares of Common Stock had been issued at a price per share equal to CP_1 (determined by dividing the aggregate consideration received by the Corporation in respect of such issue by CP_1); and

(e) "C" shall mean the number of such Additional Shares of Common Stock issued in such transaction.

4.4.5 Determination of Consideration. For purposes of this Subsection 4.4, the consideration received by the Corporation for the issue of any Additional Shares of Common Stock shall be computed as follows:

(a) Cash and Property: Such consideration shall:

(i) insofar as it consists of cash, be computed at the aggregate amount of cash received by the Corporation, excluding amounts paid or payable for accrued interest;

(ii) insofar as it consists of property other than cash, be computed at the fair market value thereof at the time of such issue, as determined in good faith by the Board of Directors of the Corporation; and

(iii) in the event Additional Shares of Common Stock are issued together with other shares or securities or other assets of the Corporation for consideration which covers both, be the

proportion of such consideration so received, computed as provided in clauses (i) and (ii) above, as determined in good faith by the Board of Directors of the Corporation.

(b) Options and Convertible Securities. The consideration per share received by the Corporation for Additional Shares of Common Stock deemed to have been issued pursuant to Subsection 4.4.3, relating to Options and Convertible Securities, shall be determined by dividing:

(i) The total amount, if any, received or receivable by the Corporation as consideration for the issue of such Options or Convertible Securities, plus the minimum aggregate amount of additional consideration (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such consideration) payable to the Corporation upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities, by

(ii) the maximum number of shares of Common Stock (as set forth in the instruments relating thereto, without regard to any provision contained therein for a subsequent adjustment of such number) issuable upon the exercise of such Options or the conversion or exchange of such Convertible Securities, or in the case of Options for Convertible Securities, the exercise of such Options for Convertible Securities and the conversion or exchange of such Convertible Securities.

4.4.6 Multiple Closing Dates. In the event the Corporation shall issue on more than one date Additional Shares of Common Stock that are a part of one transaction or a series of related transactions and that would result in an adjustment to the Conversion Price pursuant to the terms of Subsection 4.4.4, then, upon the final such issuance, the Conversion Price shall be readjusted to give effect to all such issuances as if they occurred on the date of the first such issuance (and without giving effect to any additional adjustments as a result of any such subsequent issuances within such period).

4.5 Adjustment for Stock Splits and Combinations. If the Corporation shall at any time or from time to time after the Original Issue Date effect a subdivision of the outstanding Common Stock, the Conversion Price in effect immediately before that subdivision shall be proportionately decreased so that the number of shares of Common Stock issuable on conversion of each share of Preferred Stock shall be increased in proportion to such increase in the aggregate number of shares of Common Stock outstanding. If the Corporation shall at any time or from time to time after the Original Issue Date combine the outstanding shares of Common Stock, the Conversion Price in effect

immediately before the combination shall be proportionately increased so that the number of shares of Common Stock issuable on conversion of each share of such series shall be decreased in proportion to such decrease in the aggregate number of shares of Common Stock outstanding. Any adjustment under this subsection shall become effective at the close of business on the date the subdivision or combination becomes effective.

4.6 Adjustment for Certain Dividends and Distributions. In the event the Corporation at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable on the Common Stock in additional shares of Common Stock, then and in each such event the Conversion Price in effect immediately before such event shall be decreased as of the time of such issuance or, in the event such a record date shall have been fixed, as of the close of business on such record date, by multiplying the Conversion Price then in effect by a fraction:

(1) the numerator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date, and

(2) the denominator of which shall be the total number of shares of Common Stock issued and outstanding immediately prior to the time of such issuance or the close of business on such record date plus the number of shares of Common Stock issuable in payment of such dividend or distribution.

Notwithstanding the foregoing (a) if such record date shall have been fixed and such dividend is not fully paid or if such distribution is not fully made on the date fixed therefor, the Conversion Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Conversion Price shall be adjusted pursuant to this subsection as of the time of actual payment of such dividends or distributions; and (b) that no such adjustment shall be made if the holders of Preferred Stock simultaneously receive a dividend or other distribution of shares of Common Stock in a number equal to the number of shares of Common Stock as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.7 Adjustments for Other Dividends and Distributions. In the event the Corporation at any time or from time to time after the Original Issue Date shall make or issue, or fix a record date for the determination of holders of Common Stock entitled to receive, a dividend or other distribution payable in securities of the Corporation (other than a distribution of shares of Common Stock in respect of outstanding shares of Common Stock) or in other property and the provisions of Section 1 do not apply to such dividend or distribution, then and in each such event the holders of Preferred Stock shall receive, simultaneously with the distribution to the holders of Common Stock, a dividend or other distribution of such securities or other property in an amount equal to the amount of such securities or other property as they would have received if all outstanding shares of Preferred Stock had been converted into Common Stock on the date of such event.

4.8 Adjustment for Merger or Reorganization, etc. Subject to the provisions of Subsection 2.3, if there shall occur any reorganization, recapitalization, reclassification, consolidation or merger involving the Corporation in which the Common Stock (but not the Preferred Stock) is converted into or exchanged for securities, cash or other property (other than a transaction covered by Subsections 4.4, 4.6 or 4.7), then, following any such reorganization, recapitalization, reclassification, consolidation or merger, each share of Preferred Stock shall thereafter be convertible in lieu of the Common Stock into which it was convertible prior to such event into the kind and amount of securities, cash or other property which a holder of the number of shares of Common Stock of the Corporation issuable upon conversion of one share of Preferred Stock immediately prior to such reorganization,

recapitalization, reclassification, consolidation or merger would have been entitled to receive pursuant to such transaction; and, in such case, appropriate adjustment (as determined in good faith by the Board of Directors of the Corporation) shall be made in the application of the provisions in this Section 4 with respect to the rights and interests thereafter of the holders of the Preferred Stock, to the end that the provisions set forth in this Section 4 (including provisions with respect to changes in and other adjustments of the Conversion Price) shall thereafter be applicable, as nearly as reasonably may be, in relation to any securities or other property thereafter deliverable upon the conversion of the Preferred Stock. For the avoidance of doubt, nothing in this Subsection 4.8 shall be construed as preventing the holders of Preferred Stock from seeking any appraisal rights to which they are otherwise entitled under the DGCL in connection with a merger triggering an adjustment hereunder, nor shall this Subsection 4.8 be deemed conclusive evidence of the fair value of the shares of Preferred Stock in any such appraisal proceeding.

4.9 Certificate as to Adjustments. Upon the occurrence of each adjustment or readjustment of the Conversion Price pursuant to this Section 4, the Corporation at its expense shall, as promptly as reasonably practicable but in any event not later than 10 days thereafter, compute such adjustment or readjustment in accordance with the terms hereof and furnish to each holder of Preferred Stock a certificate setting forth such adjustment or readjustment (including the kind and amount of securities, cash or other property into which the Preferred Stock is convertible) and showing in detail the facts upon which such adjustment or readjustment is based. The Corporation shall, as promptly as reasonably practicable after the written request at any time of any holder of Preferred Stock (but in any event not later than 10 days thereafter), furnish or cause to be furnished to such holder a certificate setting forth (i) the Conversion Price then in effect, and (ii) the number of shares of Common Stock and the amount, if any, of other securities, cash or property which then would be received upon the conversion of Preferred Stock.

4.10 Notice of Record Date. In the event:

(a) the Corporation shall take a record of the holders of its Common Stock (or other capital stock or securities at the time issuable upon conversion of the Preferred Stock) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of capital stock of any class or any other securities, or to receive any other security; or

(b) of any capital reorganization of the Corporation, any reclassification of the Common Stock of the Corporation, or any Deemed Liquidation Event; or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Corporation,

then, and in each such case, the Corporation will send or cause to be sent to the holders of the Preferred Stock a notice specifying, as the case may be, (i) the record date for such dividend, distribution or right, and the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is proposed to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other capital stock or securities at the time issuable upon the conversion of the Preferred Stock) shall be entitled to exchange their shares of Common Stock (or such other capital stock or securities) for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up, and the amount per share and character of such exchange applicable to the Preferred Stock and the Common Stock. Such notice shall be sent at least 10 days prior to the record date or effective date for the event specified in such notice.

5. Mandatory Conversion.

5.1 Trigger Events. Upon either (a) a Qualified IPO or (b) the date and time, or the occurrence of an event, specified by vote or written consent of the Requisite Holders (the time of such closing or the date and time specified or the time of the event specified in such vote or written consent is referred to herein as the "**Mandatory Conversion Time**"), then (i) all outstanding shares of Preferred Stock shall automatically be converted into shares of Common Stock, at the then effective conversion rate as calculated pursuant to Subsection 4.1.1. and (ii) such shares may not be reissued by the Corporation.

5.2 Procedural Requirements. All holders of record of shares of Preferred Stock shall be sent written notice of the Mandatory Conversion Time and the place designated for mandatory conversion of all such shares of Preferred Stock pursuant to this Section 5. Such notice need not be sent in advance of the occurrence of the Mandatory Conversion Time. Upon receipt of such notice, each holder of shares of Preferred Stock in certificated form shall surrender his, her or its certificate or certificates for all such shares (or, if such holder alleges that such certificate has been lost, stolen or destroyed, a lost certificate affidavit and agreement reasonably acceptable to the Corporation to indemnify the Corporation against any claim that may be made against the Corporation on account of the alleged loss, theft or destruction of such certificate) to the Corporation at the place designated in such notice. If so required by the Corporation, any certificates surrendered for conversion shall be endorsed or accompanied by written instrument or instruments of transfer, in form satisfactory to the Corporation, duly executed by the registered holder or by his, her or its attorney duly authorized in writing. All rights with respect to the Preferred Stock converted pursuant to Subsection 5.1, including the rights, if any, to receive notices and vote (other than as a holder of Common Stock), will terminate at the Mandatory Conversion Time (notwithstanding the failure of the holder or holders thereof to surrender any certificates at or prior to such time), except only the rights of the holders thereof, upon surrender of any certificate or certificates of such holders (or lost certificate affidavit and agreement) therefor, to receive the items provided for in the next sentence of this Subsection 5.2. As soon as practicable after the Mandatory Conversion Time and, if applicable, the surrender of any certificate or certificates (or lost certificate affidavit and agreement) for Preferred Stock, the Corporation shall (a) issue and deliver to such holder, or to his, her or its nominees, a certificate or certificates for the number of full shares of Common Stock issuable on such conversion in accordance with the provisions hereof and (b) pay cash as provided in Subsection 4.2 in lieu of any fraction of a share of Common Stock otherwise issuable upon such conversion and the payment of any declared but unpaid dividends on the shares of Preferred Stock converted. Such converted Preferred Stock shall be retired and cancelled and may not be reissued as shares of Preferred Stock, and the Corporation may thereafter take such appropriate action (without the need for stockholder action) as may be necessary to reduce the authorized number of shares of Preferred Stock and the authorized number of shares of the applicable series of Preferred Stock accordingly.

6. Redeemed or Otherwise Acquired Shares. Any shares of Preferred Stock that are redeemed or otherwise acquired by the Corporation or any of its subsidiaries shall be automatically and immediately cancelled and retired and shall not be reissued, sold or transferred. Neither the Corporation nor any of its subsidiaries may exercise any voting or other rights granted to the holders of Preferred Stock following redemption.

7. Waiver. Any of the rights, powers, preferences and other terms of any series of Preferred Stock set forth herein may be waived on behalf of all holders of such series of Preferred Stock by the affirmative written consent or vote of the holders of at least a majority of the shares of such series of Preferred Stock then outstanding. Any of the rights, powers, preferences and other terms of the Preferred Stock as a class set forth herein may be waived on behalf of all holders of such Preferred Stock by the Requisite Holders.

8. Notices. Any notice required or permitted by the provisions of this Article Fourth to be given to a holder of shares of Preferred Stock shall be mailed, postage prepaid, to the post office address last shown on the records of the Corporation, or given by electronic communication in compliance with the provisions of the General Corporation Law, and shall be deemed sent upon such mailing or electronic transmission.

FIFTH: Subject to any additional vote required by the certificate of Incorporation or bylaws of the corporation, in furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, repeal, alter, amend and rescind any or all of the bylaws of the Corporation.

SIXTH: Subject to any additional vote required by the certificate of incorporation of the Corporation, the number of directors of the Corporation shall be determined in the manner set forth in the bylaws of the Corporation.

SEVENTH: Elections of directors need not be by written ballot unless the bylaws of the Corporation shall so provide.

EIGHTH: Meetings of stockholders may be held within or without the State of Delaware, as the bylaws of the Corporation may provide. The books of the Corporation may be kept outside the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the bylaws of the Corporation.

NINTH: To the fullest extent permitted by law, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the General Corporation Law or any other law of the State of Delaware is amended after approval by the stockholders of this Article Ninth to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the General Corporation Law as so amended.

Any repeal or modification of the foregoing provisions of this Article Ninth by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

TENTH: To the fullest extent permitted by applicable law, the Corporation is authorized to provide indemnification of (and advancement of expenses to) directors, officers and agents of the Corporation (and any other persons to which General Corporation Law permits the Corporation to provide indemnification) through bylaw provisions, agreements with such agents or other persons, vote of stockholders or disinterested directors or otherwise, in excess of the indemnification and advancement otherwise permitted by Section 145 of the General Corporation Law.

Any amendment, repeal or modification of the foregoing provisions of this Article Tenth shall not adversely affect any right or protection of any director, officer or other agent of the Corporation existing at the time of such amendment, repeal or modification.

ELEVENTH: The Corporation renounces, to the fullest extent permitted by law, any interest or expectancy of the Corporation in, or in being offered an opportunity to participate in, any Excluded Opportunity. An "**Excluded Opportunity**" is any matter, transaction or interest that is presented to, or acquired, created or developed by, or which otherwise comes into the possession of (i) any director of the Corporation who is not an employee of the Corporation or any of its subsidiaries, or (ii) any holder of Preferred Stock or any partner, member, director, stockholder, employee or agent of any

such holder, other than someone who is an employee of the Corporation or any of its subsidiaries (collectively, "**Covered Persons**"), unless such matter, transaction or interest is presented to, or acquired, created or developed by, or otherwise comes into the possession of, a Covered Person expressly and solely in such Covered Person's capacity as a director of the Corporation.

TWELFTH: Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery in the State of Delaware shall be the sole and exclusive forum for any stockholder (including a beneficial owner) to bring (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of breach of fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation's stockholders, (iii) any action asserting a claim against the Corporation, its directors, officers or employees arising pursuant to any provision of the Delaware General Corporation Law or the Corporation's certificate of incorporation or bylaws or (iv) any action asserting a claim against the Corporation, its directors, officers or employees governed by the internal affairs doctrine, except for, as to each of (i) through (iv) above, any claim as to which the Court of Chancery determines that there is an indispensable party not subject to the jurisdiction of the Court of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within 10 days following such determination), which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, or for which the Court of Chancery does not have subject matter jurisdiction. If any provision or provisions of this Article Twelfth shall be held to be invalid, illegal or unenforceable as applied to any person or entity or circumstance for any reason whatsoever, then, to the fullest extent permitted by law, the validity, legality and enforceability of such provisions in any other circumstance and of the remaining provisions of this Article Twelfth (including, without limitation, each portion of any sentence of this Article Twelfth containing any such provision held to be invalid, illegal or unenforceable that is not itself held to be invalid, illegal or unenforceable) and the application of such provision to other persons or entities and circumstances shall not in any way be affected or impaired thereby.

* * *

3. That the foregoing amendment and restatement was approved by the holders of the requisite number of shares of this corporation in accordance with Section 228 of the General Corporation Law.

4. That this Amended and Restated Certificate of Incorporation, which restates and integrates and further amends the provisions of this Corporation's Amended and Restated Certificate of Incorporation, has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law.

IN WITNESS WHEREOF, this Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this corporation on this 15th day of October, 2018.

By: /s/ Edward Kaye, M.D.
Chief Executive Officer

EXHIBIT 3.3

STOKE THERAPEUTICS, INC.
(FKA ASOTHERA PHARMACEUTICALS, INC.)

a Delaware Corporation

BYLAWS

As Adopted June 18, 2014

STOKE THERAPEUTICS, INC.

(FKA ASOTHERA PHARMACEUTICALS, INC.)

a Delaware Corporation

BYLAWS

As Adopted June 18, 2014

ARTICLE I: STOCKHOLDERS

Section 1.1: Annual Meetings. Unless members of the Board of Directors of the Corporation (the "***Board***") are elected by written consent in lieu of an annual meeting, as permitted by Section 211 of the Delaware General Corporation Law (the "***DGCL***") and these Bylaws, an annual meeting of stockholders shall be held for the election of directors at such date and time as the Board shall each year fix. The meeting may be held either at a place, within or without the State of Delaware, or by means of remote communication as the Board in its sole discretion may determine. Any proper business may be transacted at the annual meeting.

Section 1.2: Special Meetings. Special meetings of stockholders for any purpose or purposes may be called at any time by the Chairperson of the Board, the Chief Executive Officer, the President, the holders of shares of the Corporation that are entitled to cast not less than ten percent (10%) of the total number of votes entitled to be cast by all stockholders at such meeting, or by a majority of the "***Whole Board***," which shall mean the total number of authorized directors, whether or not there exist any vacancies in previously authorized directorships. Special meetings may not be called by any other person or persons. If a special meeting of stockholders is called by any person or persons other than by a majority of the members of the Board, then such person or persons shall request such meeting by delivering a written request to call such meeting to each member of the Board, and the Board shall then determine the time and date of such special meeting, which shall be held not more than one hundred twenty (120) days nor less than thirty-five (35) days after the written request to call such special meeting was delivered to each member of the Board. The special meeting may be held either at a place, within or without the State of Delaware, or by means of remote communication as the Board in its sole discretion may determine.

Section 1.3: Notice of Meetings. Notice of all meetings of stockholders shall be given in writing or by electronic transmission in the manner provided by law (including, without limitation, as set forth in Section 7.1.1 of these Bylaws) stating the date, time and place, if any, of the meeting and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Unless otherwise required by applicable law or the Certificate of Incorporation of the Corporation (the "***Certificate of Incorporation***"), such notice shall be given not less than ten (10), nor more than sixty (60), days before the date of the meeting to each stockholder of record entitled to vote at such meeting.

Section 1.4: Adjournments. The chairperson of the meeting shall have the power to adjourn the meeting to another time, date and place (if any). Any meeting of stockholders may adjourn from time to time, and notice need not be given of any such adjourned meeting if the time, date and place (if any) thereof and the means of remote communications (if any) by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken; *provided*, *however*, that

if the adjournment is for more than thirty (30) days, or if a new record date is fixed for the adjourned meeting, then a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. At the adjourned meeting the Corporation may transact any business that might have been transacted at the original meeting. To the fullest extent permitted by law, the Board may postpone or reschedule any previously scheduled special or annual meeting of stockholders before it is to be held, in which case notice shall be provided to the stockholders of the new date, time and place, if any, of the meeting as provided in Section 1.3 above.

Section 1.5: Quorum. At each meeting of stockholders the holders of a majority of the voting power of the shares of stock entitled to vote at the meeting, present in person or represented by proxy, shall constitute a quorum for the transaction of business, unless otherwise required by applicable law. If a quorum shall fail to attend any meeting, the chairperson of the meeting or the holders of a majority of the shares entitled to vote who are present, in person or by proxy, at the meeting may adjourn the meeting. Shares of the Corporation's stock belonging to the Corporation (or to another corporation, if a majority of the shares entitled to vote in the election of directors of such other corporation are held, directly or indirectly, by the Corporation), shall neither be entitled to vote nor be counted for quorum purposes; *provided*, *however*, that the foregoing shall not limit the right of the Corporation or any other corporation to vote any shares of the Corporation's stock held by it in a fiduciary capacity and to count such shares for purposes of determining a quorum.

Section 1.6: Organization. Meetings of stockholders shall be presided over by such person as the Board may designate, or, in the absence of such a person, the Chairperson of the Board, or, in the absence of such person, the President of the Corporation, or, in the absence of such person, such person as may be chosen by the holders of a majority of the voting power of the shares entitled to vote who are present, in person or by proxy, at the meeting. Such person shall be chairperson of the meeting and, subject to Section 1.11 hereof, shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of discussion as seems to him or her to be in order. The Secretary of the Corporation shall act as secretary of the meeting, but in such person's absence the chairperson of the meeting may appoint any person to act as secretary of the meeting.

Section 1.7: Voting; Proxies. Each stockholder entitled to vote at a meeting of stockholders, or to take corporate action by written consent without a meeting, may authorize another person or persons to act for such stockholder by proxy. Such a proxy may be prepared, transmitted and delivered in any manner permitted by applicable law. Except as may be required in the Certificate of Incorporation, directors shall be elected by a plurality of the votes of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. Unless otherwise provided by applicable law, the Certificate of Incorporation or these Bylaws, every matter other than the election of directors shall be decided by the affirmative vote of the holders of a majority of the voting power of the shares of stock entitled to vote on such matter that are present in person or represented by proxy at the meeting and are voted for or against the matter.

Section 1.8: Fixing Date for Determination of Stockholders of Record.

1.8.1 Generally. In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or to take corporate action by written consent without a meeting**,** or entitled to receive payment of any dividend or other distribution or allotment

of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board may fix, except as otherwise required by law, in advance, a record date, which shall not precede the date upon which the resolution fixing the record date is adopted by the Board and which shall not be more than sixty (60), nor less than ten (10), days before the date of such meeting, nor, except as provided in Section 1.8.2 below, more than sixty (60) days prior to any other action. If no record date is fixed by the Board, then the record date shall be as provided by applicable law. To the fullest extent provided by law, a determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; ***provided***, ***however***, that the Board may fix a new record date for the adjourned meeting.

1.8.2 Stockholder Request for Action by Written Consent. Any stockholder of record seeking to have the stockholders authorize or take corporate action by written consent without a meeting shall, by written notice to the Secretary of the Corporation, request the Board to fix a record date for such consent. Such request shall include a brief description of the action proposed to be taken. Unless a record date has previously been fixed by the Board for the written consent pursuant to this Section 1.8, the Board shall, within ten (10) days after the date on which such a request is received, adopt a resolution fixing the record date. Such record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board. If no record date has been fixed by the Board within ten (10) days after the date on which such a request is received, then the record date for determining stockholders entitled to consent to corporate action in writing without a meeting, when no prior action by the Board is required by applicable law, shall be the first date on which a signed written consent setting forth the action taken or proposed to be taken is delivered to the Corporation as required by law. If no record date has been fixed by the Board and prior action by the Board is required by applicable law, then the record date for determining stockholders entitled to consent to corporate action in writing without a meeting shall be at the close of business on the date on which the Board adopts the resolution taking such prior action.

Section 1.9: List of Stockholders Entitled to Vote. A complete list of stockholders entitled to vote at any meeting of stockholders, arranged in alphabetical order and showing the address of each stockholder and the number of shares registered in the name of each stockholder, shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten (10) days prior to the meeting, either on a reasonably accessible electronic network as permitted by law (provided that the information required to gain access to the list is provided with the notice of the meeting) or during ordinary business hours at the principal place of business of the Corporation. If the meeting is held at a location where stockholders may attend in person, the list shall also be produced and kept at the time and place of the meeting during the whole time thereof and may be inspected by any stockholder who is present at the meeting. If the meeting is held solely by means of remote communication, then the list shall be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access the list shall be provided with the notice of the meeting.

Section 1.10: Action by Written Consent of Stockholders.

1.10.1 Procedure. Unless otherwise provided by the Certificate of Incorporation, any action required or permitted to be taken at any annual or special meeting of the stockholders may

be taken without a meeting, without prior notice and without a vote, if a consent or consents in writing, setting forth the action so taken, shall be signed in the manner permitted by law by the holders of outstanding stock having not less than the number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted and shall be delivered to the Corporation by delivery to its registered office in the State of Delaware, to its principal place of business or to an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to the agent of the Corporation's registered office in the State of Delaware shall be by hand or by certified or registered mail, return receipt requested. Written stockholder consents shall bear the date of signature of each stockholder who signs the consent in the manner permitted by law and shall be delivered to the Corporation as provided in Section 1.10.2 below. No written consent shall be effective to take the action set forth therein unless, within sixty (60) days of the earliest dated consent delivered to the Corporation in the manner required by law, written consents signed by a sufficient number of stockholders to take the action set forth therein are delivered to the Corporation in the manner required by law.

1.10.2 Form of Consent A telegram, cablegram or other electronic transmission consenting to an action to be taken and transmitted by a stockholder or proxy holder, or a person or persons authorized to act for a stockholder or proxy holder, shall be deemed to be written, signed and dated for the purposes of this section, provided that any such telegram, cablegram or other electronic transmission sets forth or is delivered with information from which the Corporation can determine (a) that the telegram, cablegram or other electronic transmission was transmitted by the stockholder or proxy holder or by a person or persons authorized to act for the stockholder or proxy holder and (b) the date on which such stockholder or proxy holder or authorized person or persons transmitted such telegram, cablegram or electronic transmission. The date on which such telegram, cablegram or electronic transmission is transmitted shall be deemed to be the date on which such consent was signed. No consent given by telegram, cablegram or other electronic transmission shall be deemed to have been delivered until such consent is reproduced in paper form and until such paper form shall be delivered to the Corporation by delivery to its registered office in the State of Delaware, its principal place of business or an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded. Delivery made to a Corporation's registered office shall be made by hand or by certified or registered mail, return receipt requested. Notwithstanding the foregoing limitations on delivery, consents given by telegram, cablegram or other electronic transmission may be otherwise delivered to the principal place of business of the Corporation or to an officer or agent of the Corporation having custody of the book in which proceedings of meetings of stockholders are recorded if, to the extent and in the manner provided by resolution of the Board. Any copy, facsimile or other reliable reproduction of a consent in writing may be substituted or used in lieu of the original writing for any and all purposes for which the original writing could be used, provided that such copy, facsimile or other reproduction shall be a complete reproduction of the entire original writing.

1.10.3 Notice of Consent. Prompt notice of the taking of corporate action by stockholders without a meeting by less than unanimous written consent of the stockholders shall be given to those stockholders who have not consented thereto in writing and, who, if the action had been taken at a meeting, would have been entitled to notice of the meeting, if the record date for such meeting had been the date that written consents signed by a sufficient number of holders to take the action were delivered to the Corporation as required by law. If the action which is consented

to is such as would have required the filing of a certificate under the DGCL (the "***Certificate of Action***") if such action had been voted on by stockholders at a meeting thereof, then if the DGCL so requires, the certificate so filed shall state, in lieu of any statement required by the DGCL concerning any vote of stockholders, that written stockholder consent has been given in accordance with Section 228 of the DGCL.

Section 1.11: Inspectors of Elections.

1.11.1 Applicability. Unless otherwise required by the Certificate of Incorporation or by the DGCL, the following provisions of this Section 1.11 shall apply only if and when the Corporation has a class of voting stock that is: (a) listed on a national securities exchange; (b) authorized for quotation on an interdealer quotation system of a registered national securities association; or (c) held of record by more than two thousand (2,000) stockholders. In all other cases, observance of the provisions of this Section 1.11 shall be optional, and at the discretion of the Board.

1.11.2 Appointment. The Corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors of election to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the person presiding at the meeting shall appoint one or more inspectors to act at the meeting.

1.11.3 Inspector's Oath. Each inspector of election, before entering upon the discharge of his duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of such inspector's ability.

1.11.4 Duties of Inspectors. At a meeting of stockholders, the inspectors of election shall (a) ascertain the number of shares outstanding and the voting power of each share, (b) determine the shares represented at a meeting and the validity of proxies and ballots, (c) count all votes and ballots, (d) determine and retain for a reasonable period of time a record of the disposition of any challenges made to any determination by the inspectors, and (e) certify their determination of the number of shares represented at the meeting, and their count of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors.

1.11.5 Opening and Closing of Polls. The date and time of the opening and the closing of the polls for each matter upon which the stockholders will vote at a meeting shall be announced by the chairperson of the meeting at the meeting. No ballot, proxies or votes, nor any revocations thereof or changes thereto, shall be accepted by the inspectors after the closing of the polls unless the Court of Chancery upon application by a stockholder shall determine otherwise.

1.11.6 Determinations. In determining the validity and counting of proxies and ballots, the inspectors shall be limited to an examination of the proxies, any envelopes submitted with those proxies, any information provided in connection with proxies in accordance with any information provided pursuant to Section 211(a)(2)(B)(i) of the DGCL, or Sections 211(e) or 212(c)(2) of the DGCL, ballots and the regular books and records of the Corporation, except that the inspectors may consider other reliable information for the limited purpose of reconciling proxies and ballots submitted by or on behalf of banks, brokers, their nominees or similar persons

which represent more votes than the holder of a proxy is authorized by the record owner to cast or more votes than the stockholder holds of record. If the inspectors consider other reliable information for the limited purpose permitted herein, the inspectors at the time they make their certification of their determinations pursuant to this Section 1.11 shall specify the precise information considered by them, including the person or persons from whom they obtained the information, when the information was obtained, the means by which the information was obtained and the basis for the inspectors' belief that such information is accurate and reliable.

ARTICLE II: BOARD OF DIRECTORS

Section 2.1: Number; Qualifications. The Board shall consist of one or more members. The initial number of directors shall be Two (2), and, thereafter, unless otherwise required by law or the Certificate of Incorporation, shall be fixed from time to time by resolution of a majority of the Whole Board or the stockholders of the Corporation holding at least a majority of the voting power of the Corporation's outstanding stock then entitled to vote at an election of directors. No decrease in the authorized number of directors constituting the Board shall shorten the term of any incumbent director. Directors need not be stockholders of the Corporation.

Section 2.2: Election; Resignation; Removal; Vacancies. The Board shall initially consist of the person or persons elected by the incorporator or named in the Corporation's initial Certificate of Incorporation. Each director shall hold office until the next annual meeting of stockholders and until such director's successor is elected and qualified, or until such director's earlier death, resignation or removal. Any director may resign at any time upon written notice to the Corporation. Subject to the rights of any holders of Preferred Stock then outstanding: (a) any director or the entire Board may be removed, with or without cause, by the holders of a majority of the shares then entitled to vote at an election of directors and (b) any vacancy occurring in the Board for any reason, and any newly created directorship resulting from any increase in the authorized number of directors to be elected by all stockholders having the right to vote as a single class, may be filled by the stockholders, by a majority of the directors then in office, although less than a quorum, or by a sole remaining director.

Section 2.3: Regular Meetings. Regular meetings of the Board may be held at such places, within or without the State of Delaware, and at such times as the Board may from time to time determine. Notice of regular meetings need not be given if the date, times and places thereof are fixed by resolution of the Board.

Section 2.4: Special Meetings. Special meetings of the Board may be called by the Chairperson of the Board, the President or a majority of the members of the Board then in office and may be held at any time, date or place, within or without the State of Delaware, as the person or persons calling the meeting shall fix. Notice of the time, date and place of such meeting shall be given, orally, in writing or by electronic transmission (including electronic mail), by the person or persons calling the meeting to all directors at least four (4) days before the meeting if the notice is mailed, or at least twenty-four (24) hours before the meeting if such notice is given by telephone, hand delivery, telegram, telex, mailgram, facsimile, electronic mail or other means of electronic transmission. Unless otherwise indicated in the notice, any and all business may be transacted at a special meeting.

Section 2.5: Remote Meetings Permitted. Members of the Board, or any committee of the Board, may participate in a meeting of the Board or such committee by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting pursuant to conference telephone or other communications equipment shall constitute presence in person at such meeting.

Section 2.6: Quorum; Vote Required for Action. At all meetings of the Board a majority of the Whole Board shall constitute a quorum for the transaction of business. If a quorum shall fail to attend any meeting, a majority of those present may adjourn the meeting to another place, date or time without further notice thereof. Except as otherwise provided herein or in the Certificate of Incorporation, or required by law, the vote of a majority of the directors present at a meeting at which a quorum is present shall be the act of the Board.

Section 2.7: Organization. Meetings of the Board shall be presided over by the Chairperson of the Board, or in such person's absence by the President, or in such person's absence by a chairperson chosen at the meeting. The Secretary shall act as secretary of the meeting, but in such person's absence the chairperson of the meeting may appoint any person to act as secretary of the meeting.

Section 2.8: Written Action by Directors. Any action required or permitted to be taken at any meeting of the Board, or of any committee thereof, may be taken without a meeting if all members of the Board or such committee, as the case may be, consent thereto in writing or by electronic transmission, and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Board or committee, respectively, in the minute books of the Corporation. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 2.9: Powers. The Board may, except as otherwise required by law or the Certificate of Incorporation, exercise all such powers and manage and direct all such acts and things as may be exercised or done by the Corporation.

Section 2.10: Compensation of Directors. Members of the Board, as such, may receive, pursuant to a resolution of the Board, fees and other compensation for their services as directors, including without limitation their services as members of committees of the Board.

ARTICLE III: COMMITTEES

Section 3.1: Committees. The Board may designate one or more committees, each committee to consist of one or more of the directors of the Corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of the committee, the member or members thereof present at any meeting of such committee who are not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board to act at the meeting in place of any such absent or disqualified member. Any such committee, to the extent provided in a resolution of the Board, shall have and may exercise all the powers and authority of the Board in the management of the business and affairs of the Corporation and may authorize the seal of the Corporation to be affixed to all papers that may require it; but no such committee shall have the

power or authority in reference to the following matters: (a) approving, adopting, or recommending to the stockholders any action or matter (other than the election or removal of members of the Board) expressly required by the DGCL to be submitted to stockholders for approval or (b) adopting, amending or repealing any bylaw of the Corporation.

Section 3.2: Committee Rules. Unless the Board otherwise provides, each committee designated by the Board may make, alter and repeal rules for the conduct of its business. In the absence of such rules each committee shall conduct its business in the same manner as the Board conducts its business pursuant to Article II of these Bylaws.

ARTICLE IV: OFFICERS

Section 4.1: Generally. The officers of the Corporation shall consist of a Chief Executive Officer (who may be the Chairperson of the Board or the President), a Secretary and a Treasurer and may consist of such other officers, including a Chief Financial Officer, Chief Technology Officer and one or more Vice Presidents, as may from time to time be appointed by the Board. All officers shall be elected by the Board; *provided*, *however*, that the Board may empower the Chief Executive Officer of the Corporation to appoint any officer other than the Chairperson of the Board, the Chief Executive Officer, the President, the Chief Financial Officer or the Treasurer. Each officer shall hold office until such person's successor is appointed or until such person's earlier resignation, death or removal. Any number of offices may be held by the same person. Any officer may resign at any time upon written notice to the Corporation. Any vacancy occurring in any office of the Corporation by death, resignation, removal or otherwise may be filled by the Board.

Section 4.2: Chief Executive Officer. Subject to the control of the Board and such supervisory powers, if any, as may be given by the Board, the powers and duties of the Chief Executive Officer of the Corporation are:

(a) To act as the general manager and, subject to the control of the Board, to have general supervision, direction and control of the business and affairs of the Corporation;

(b) Subject to Article I, Section 1.6, to preside at all meetings of the stockholders;

(c) Subject to Article I, Section 1.2, to call special meetings of the stockholders to be held at such times and, subject to the limitations prescribed by law or by these Bylaws, at such places as he or she shall deem proper; and

(d) To affix the signature of the Corporation to all deeds, conveyances, mortgages, guarantees, leases, obligations, bonds, certificates and other papers and instruments in writing which have been authorized by the Board or which, in the judgment of the Chief Executive Officer, should be executed on behalf of the Corporation; to sign certificates for shares of stock of the Corporation; and, subject to the direction of the Board, to have general charge of the property of the Corporation and to supervise and control all officers, agents and employees of the Corporation.

The President shall be the Chief Executive Officer of the Corporation unless the Board shall designate another officer to be the Chief Executive Officer. If there is no President, and the Board has not designated any other officer to be the Chief Executive Officer, then the Chairperson of the Board shall be the Chief Executive Officer.

Section 4.3: Chairperson of the Board. The Chairperson of the Board shall have the power to preside at all meetings of the Board and shall have such other powers and duties as provided in these Bylaws and as the Board may from time to time prescribe.

Section 4.4: President. The President shall be the Chief Executive Officer of the Corporation unless the Board shall have designated another officer as the Chief Executive Officer of the Corporation. Subject to the provisions of these Bylaws and to the direction of the Board, and subject to the supervisory powers of the Chief Executive Officer (if the Chief Executive Officer is an officer other than the President), and subject to such supervisory powers and authority as may be given by the Board to the Chairperson of the Board, and/or to any other officer, the President shall have the responsibility for the general management and control of the business and affairs of the Corporation and the general supervision and direction of all of the officers, employees and agents of the Corporation (other than the Chief Executive Officer, if the Chief Executive Officer is an officer other than the President) and shall perform all duties and have all powers that are commonly incident to the office of President or that are delegated to the President by the Board.

Section 4.5: Vice President. Each Vice President shall have all such powers and duties as are commonly incident to the office of Vice President, or that are delegated to him or her by the Board or the Chief Executive Officer. A Vice President may be designated by the Board to perform the duties and exercise the powers of the Chief Executive Officer in the event of the Chief Executive Officer's absence or disability.

Section 4.6: Chief Financial Officer. The Chief Financial Officer shall be the Treasurer of the Corporation unless the Board shall have designated another officer as the Treasurer of the Corporation. Subject to the direction of the Board and the Chief Executive Officer, the Chief Financial Officer shall perform all duties and have all powers that are commonly incident to the office of Chief Financial Officer.

Section 4.7: Treasurer. The Treasurer shall have custody of all moneys and securities of the Corporation. The Treasurer shall make such disbursements of the funds of the Corporation as are authorized and shall render from time to time an account of all such transactions. The Treasurer shall also perform such other duties and have such other powers as are commonly incident to the office of Treasurer, or as the Board or the Chief Executive Officer may from time to time prescribe.

Section 4.8: Chief Technology Officer. The Chief Technology Officer shall have responsibility for the general research and development activities of the Corporation, for supervision of the Corporation's research and development personnel, for new product development and product improvements, for overseeing the development and direction of the Corporation's intellectual property development and such other responsibilities as may be given to the Chief Technology Officer by the Board, subject to: (a) the provisions of these Bylaws; (b) the direction of the Board; (c) the supervisory powers of the Chief Executive Officer of the

Corporation; and (d) those supervisory powers that may be given by the Board to the Chairperson or Vice Chairperson of the Board.

Section 4.9: Secretary. The Secretary shall issue or cause to be issued all authorized notices for, and shall keep, or cause to be kept, minutes of all meetings of the stockholders and the Board. The Secretary shall have charge of the corporate minute books and similar records and shall perform such other duties and have such other powers as are commonly incident to the office of Secretary, or as the Board or the Chief Executive Officer may from time to time prescribe.

Section 4.10: Delegation of Authority. The Board may from time to time delegate the powers or duties of any officer to any other officers or agents, notwithstanding any provision hereof.

Section 4.11: Removal. Any officer of the Corporation shall serve at the pleasure of the Board and may be removed at any time, with or without cause, by the Board; provided that if the Board has empowered the Chief Executive Officer to appoint any Vice Presidents of the Corporation, then such Vice Presidents may be removed by the Chief Executive Officer. Such removal shall be without prejudice to the contractual rights of such officer, if any, with the Corporation.

ARTICLE V: STOCK

Section 5.1: Certificates. The shares of capital stock of the Corporation shall be represented by certificates; *provided*, *however*, that the Board may provide by resolution or resolutions that some or all of any or all classes or series of its stock may be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the Corporation (or the transfer agent or registrar, as the case may be). Notwithstanding the adoption of such resolution by the Board, every holder of stock that is a certificated security shall be entitled to have a certificate signed by or in the name of the Corporation by the Chairperson or Vice-Chairperson of the Board, or the President or a Vice President, and by the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary, of the Corporation, certifying the number of shares owned by such stockholder in the Corporation. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if such person were an officer, transfer agent or registrar at the date of issue. If any holder of uncertificated shares elects to receive a certificate, the Corporation (or the transfer agent or registrar, as the case may be) shall, to the extent permitted under applicable law and rules, regulations and listing requirements of any stock exchange or stock market on which the Corporation's shares are listed or traded, cease to provide annual statements indicating such holder's holdings of shares in the Corporation.

Section 5.2: Lost, Stolen or Destroyed Stock Certificates; Issuance of New Certificates. The Corporation may issue a new certificate of stock, or uncertificated shares, in the place of any certificate previously issued by it, alleged to have been lost, stolen or destroyed, , upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen or destroyed, and the Corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to agree to indemnify the Corporation and/or to

give the Corporation a bond sufficient to indemnify it, against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate.

Section 5.3: Other Regulations. The issue, transfer, conversion and registration of stock certificates and uncertificated securities shall be governed by such other regulations as the Board may establish.

ARTICLE VI: INDEMNIFICATION

Section 6.1: Indemnification of Officers and Directors. Each person who was or is made a party to, or is threatened to be made a party to, or is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "***Proceeding***"), by reason of the fact that such person (or a person of whom such person is the legal representative), is or was a member of the Board or officer of the Corporation or a Reincorporated Predecessor (as defined below) or is or was serving at the request of the Corporation or a Reincorporated Predecessor as a member of the board of directors, officer or trustee of another corporation, or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans (for purposes of this Article VI, an "***Indemnitee***"), shall be indemnified and held harmless by the Corporation to the fullest extent permitted by applicable law, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than such law permitted the Corporation to provide prior to such amendment), against all expenses, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes and penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such Indemnitee in connection therewith, provided such Indemnitee acted in good faith and in a manner that the Indemnitee reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or Proceeding, had no reasonable cause to believe the Indemnitee's conduct was unlawful. Such indemnification shall continue as to an Indemnitee who has ceased to be a director or officer and shall inure to the benefit of such Indemnitees' heirs, executors and administrators. Notwithstanding the foregoing, the Corporation shall indemnify any such Indemnitee seeking indemnity in connection with a Proceeding (or part thereof) initiated by such Indemnitee only if such Proceeding (or part thereof) was authorized by the Board or such indemnification is authorized by an agreement approved by the Board. As used herein, the term the "***Reincorporated Predecessor***" means a corporation that is merged with and into the Corporation in a statutory merger where (a) the Corporation is the surviving corporation of such merger; (b) the primary purpose of such merger is to change the corporate domicile of the Reincorporated Predecessor to Delaware.

Section 6.2: Advance of Expenses. The Corporation shall pay all expenses (including attorneys' fees) incurred by such an Indemnitee in defending any such Proceeding as they are incurred in advance of its final disposition; *provided*, *however*, that (a) if the DGCL then so requires, the payment of such expenses incurred by such an Indemnitee in advance of the final disposition of such Proceeding shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such Indemnitee, to repay all amounts so advanced if it should be determined ultimately by final judicial decision from which there is no appeal that such Indemnitee is not entitled to be indemnified under this Article VI or otherwise; and (b) the Corporation shall not be required to advance any expenses to a person against whom the Corporation directly brings

a claim, in a Proceeding, alleging that such person has breached such person's duty of loyalty to the Corporation, committed an act or omission not in good faith or that involves intentional misconduct or a knowing violation of law, or derived an improper personal benefit from a transaction.

Section 6.3: Non-Exclusivity of Rights. The rights conferred on any person in this Article VI shall not be exclusive of any other right that such person may have or hereafter acquire under any statute, provision of the Certificate of Incorporation, Bylaw, agreement, vote or consent of stockholders or disinterested directors, or otherwise. Additionally, nothing in this Article VI shall limit the ability of the Corporation, in its discretion, to indemnify or advance expenses to persons whom the Corporation is not obligated to indemnify or advance expenses pursuant to this Article VI.

Section 6.4: Indemnification Contracts. The Board is authorized to cause the Corporation to enter into indemnification contracts with any director, officer, employee or agent of the Corporation, or any person serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including employee benefit plans, providing indemnification or advancement rights to such person. Such rights may be greater than those provided in this Article VI.

Section 6.5: Right of Indemnitee to Bring Suit. The following shall apply to the extent not in conflict with any indemnification contract provided for in Section 6.4 above.

6.5.1 Right to Bring Suit. If a claim under Section 6.1 or 6.2 of this Article VI is not paid in full by the Corporation within sixty (60) days after a written claim has been received by the Corporation, except in the case of a claim for an advancement of expenses, in which case the applicable period shall be twenty (20) days, the Indemnitee may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim. If successful in whole or in part in any such suit, or in a suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Indemnitee shall be entitled to be paid also the expense of prosecuting or defending such suit. In (a) any suit brought by the Indemnitee to enforce a right to indemnification hereunder (but not in a suit brought by the Indemnitee to enforce a right to an advancement of expenses) it shall be a defense that, and (b) in any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that, the Indemnitee has not met any applicable standard for indemnification set forth in applicable law.

6.5.2 Effect of Determination. Neither the failure of the Corporation (including its directors who are not parties to such action, a committee of such directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such suit that indemnification of the Indemnitee is proper in the circumstances because the Indemnitee has met the applicable standard of conduct set forth in applicable law, nor an actual determination by the Corporation (including its directors who are not parties to such action, a committee of such directors, independent legal counsel or its stockholders) that the Indemnitee has not met such applicable standard of conduct, shall create a presumption that the Indemnitee has not met the applicable standard of conduct or, in the case of such a suit brought by the Indemnitee, be a defense to such suit.

6.5.3 Burden of Proof. In any suit brought by the Indemnitee to enforce a right to indemnification or to an advancement of expenses hereunder, or brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the burden of proving that the Indemnitee is not entitled to be indemnified, or to such advancement of expenses, under this Article VI, or otherwise, shall be on the Corporation.

Section 6.6: Nature of Rights. The rights conferred upon Indemnitees in this Article VI shall be contract rights and such rights shall continue as to an Indemnitee who has ceased to be a director, officer or trustee and shall inure to the benefit of the Indemnitee's heirs, executors and administrators. Any amendment, repeal or modification of any provision of this Article VI that adversely affects any right of an Indemnitee or an Indemnitee's successors shall be prospective only, and shall not adversely affect any right or protection conferred on a person pursuant to this Article VI and existing at the time of such amendment, repeal or modification.

ARTICLE VII: NOTICES

Section 7.1: Notice.

7.1.1 Form and Delivery. Except as otherwise specifically required in these Bylaws (including, without limitation, Section 7.1.2 below) or by law, all notices required to be given pursuant to these Bylaws shall be in writing and may, (a) in every instance in connection with any delivery to a member of the Board, be effectively given by hand delivery (including use of a delivery service), by depositing such notice in the mail, postage prepaid, or by sending such notice by prepaid telegram, cablegram, overnight express courier, facsimile, electronic mail or other form of electronic transmission and (b) be effectively be delivered to a stockholder when given by hand delivery, by depositing such notice in the mail, postage prepaid or, if specifically consented to by the stockholder as described in Section 7.1.2 of this Article VII by sending such notice by telegram, cablegram, facsimile, electronic mail or other form of electronic transmission. Any such notice shall be addressed to the person to whom notice is to be given at such person's address as it appears on the records of the Corporation. The notice shall be deemed given (a) in the case of hand delivery, when received by the person to whom notice is to be given or by any person accepting such notice on behalf of such person, (b) in the case of delivery by mail, upon deposit in the mail, (c) in the case of delivery by overnight express courier, when dispatched, and (d) in the case of delivery via telegram, cablegram, facsimile, electronic mail or other form of electronic transmission, when dispatched.

7.1.2 Electronic Transmission. Without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the Corporation under any provision of the DGCL, the Certificate of Incorporation, or these Bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given in accordance with Section 232 of the DGCL. Any such consent shall be revocable by the stockholder by written notice to the Corporation. Any such consent shall be deemed revoked if (a) the Corporation is unable to deliver by electronic transmission two consecutive notices given by the Corporation in accordance with such consent and (b) such inability becomes known to the Secretary or an Assistant Secretary of the Corporation or to the transfer agent, or other person responsible for the giving of notice; *provided*, *however*, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action. Notice given pursuant to this Section 7.1.2 shall be deemed given: (i) if by facsimile

telecommunication, when directed to a number at which the stockholder has consented to receive notice; (ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice; (iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of such posting and the giving of such separate notice; and (iv) if by any other form of electronic transmission, when directed to the stockholder.

7.1.3 Affidavit of Giving Notice. An affidavit of the Secretary or an Assistant Secretary or of the transfer agent or other agent of the Corporation that the notice has been given in writing or by a form of electronic transmission shall, in the absence of fraud, be prima facie evidence of the facts stated therein.

Section 7.2: Waiver of Notice. Whenever notice is required to be given under any provision of the DGCL, the Certificate of Incorporation or these Bylaws, a written waiver of notice, signed by the person entitled to notice, or waiver by electronic transmission by such person, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders, directors or members of a committee of directors need be specified in any waiver of notice.

ARTICLE VIII: INTERESTED DIRECTORS

Section 8.1: Interested Directors. No contract or transaction between the Corporation and one or more of its members of the Board or officers, or between the Corporation and any other corporation, partnership, association or other organization in which one or more of its directors or officers are members of the board of directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the Board or committee thereof that authorizes the contract or transaction, or solely because his, her or their votes are counted for such purpose, if: (a) the material facts as to his, her or their relationship or interest and as to the contract or transaction are disclosed or are known to the Board or the committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum; (b) the material facts as to his, her or their relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or (c) the contract or transaction is fair as to the Corporation as of the time it is authorized, approved or ratified by the Board, a committee thereof, or the stockholders.

Section 8.2: Quorum. Interested directors may be counted in determining the presence of a quorum at a meeting of the Board or of a committee which authorizes the contract or transaction.

ARTICLE IX: MISCELLANEOUS

Section 9.1: Fiscal Year. The fiscal year of the Corporation shall be determined by resolution of the Board.

Section 9.2: Seal. The Board may provide for a corporate seal, which may have the name of the Corporation inscribed thereon and shall otherwise be in such form as may be approved from time to time by the Board.

Section 9.3: Form of Records. Any records maintained by the Corporation in the regular course of its business, including its stock ledger, books of account and minute books, may be kept on or by means of, or be in the form of, diskettes, CDs, or any other information storage device or method, provided that the records so kept can be converted into clearly legible paper form within a reasonable time. The Corporation shall so convert any records so kept upon the request of any person entitled to inspect such records pursuant to any provision of the DGCL.

Section 9.4: Reliance upon Books and Records. A member of the Board, or a member of any committee designated by the Board shall, in the performance of such person's duties, be fully protected in relying in good faith upon records of the Corporation and upon such information, opinions, reports or statements presented to the Corporation by any of the Corporation's officers or employees, or committees of the Board, or by any other person as to matters the member reasonably believes are within such other person's professional or expert competence and who has been selected with reasonable care by or on behalf of the Corporation.

Section 9.5: Certificate of Incorporation Governs. In the event of any conflict between the provisions of the Certificate of Incorporation and Bylaws, the provisions of the Certificate of Incorporation shall govern.

Section 9.6: Severability. If any provision of these Bylaws shall be held to be invalid, illegal, unenforceable or in conflict with the provisions of the Certificate of Incorporation, then such provision shall nonetheless be enforced to the maximum extent possible consistent with such holding and the remaining provisions of these Bylaws (including without limitation, all portions of any section of these Bylaws containing any such provision held to be invalid, illegal, unenforceable or in conflict with the Certificate of Incorporation, that are not themselves invalid, illegal, unenforceable or in conflict with the Certificate of Incorporation) shall remain in full force and effect.

ARTICLE X: AMENDMENT

Unless otherwise required by the Certificate of Incorporation, stockholders of the Corporation holding at least a majority of the voting power of the Corporation's outstanding voting stock then entitled to vote at an election of directors shall have the power to adopt, amend or repeal Bylaws. To the extent provided in the Certificate of Incorporation, the Board shall also have the power to adopt, amend or repeal Bylaws of the Corporation.

EXHIBIT 3.3

CERTIFICATION OF BYLAWS
OF
ASOTHERA PHARMACEUTICALS, INC.
a Delaware Corporation

I, Isabel Aznarez, certify that I am Secretary of ASOthera Pharmaceuticals, Inc., a Delaware corporation (the "***Corporation***"), that I am duly authorized to make and deliver this certification, that the attached Bylaws are a true and complete copy of the Bylaws of the Corporation in effect as of the date of this certificate.

Dated: June 18, 2014

/s/ Isabel Aznarez
Isabel Aznarez, Secretary

EXHIBIT 4.2

SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

THIS SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "**Agreement**"), is made as of the 22nd day of October, 2018, by and among Stoke Therapeutics, Inc., a Delaware corporation (the "**Company**"), and each of the Investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**."

RECITALS

WHEREAS, certain of the Investors hold shares of the Company's Series A Preferred Stock and Series A-2 Preferred Stock and/or shares of Common Stock issued upon conversion thereof and possess registration rights, information rights, rights of first offer, and other rights pursuant to an Amended and Restated Investors' Rights Agreement dated as of January 5, 2018 between the Company and such Investors (the "**Prior Agreement**"); and

WHEREAS, the Investors are holders of at least a majority of the Registrable Securities of the Company (as defined in the Prior Agreement), and desire to amend and restate the Prior Agreement in its entirety and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them under the Prior Agreement; and

WHEREAS, certain of the Investors are parties to that certain Series B Preferred Stock Purchase Agreement of even date herewith between the Company and the Investors (the "**Purchase Agreement**"), under which certain of the Company's and such Investors' obligations are conditioned upon the execution and delivery of this Agreement by the Investors and the Company;

NOW, THEREFORE, the Investors hereby agree that the Prior Agreement shall be amended and restated, and the parties to this Agreement further agree as follows:

1. Definitions.

For purposes of this Agreement:

1.1 "**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including without limitation any general partner, managing member, officer or director of such Person or any account, fund, venture capital fund or registered investment company now or hereafter existing that is controlled by one or more general partners, managing members or investment advisers of, or shares the same management company or investment adviser with, such Person.

1.2 "**Common Stock**" means shares of the Company's common stock, par value $0.0001 per share.

1.3 "**Competitor**" means a Person engaged, directly or indirectly (including through any partnership, limited liability company, corporation, joint venture or similar arrangement (whether now existing or formed hereafter)), in the development of oligonucleotide-based therapeutics that selectively increase gene expression to treat disease, but shall not include any financial investment firm, venture capital fund or collective investment vehicle that, together with its Affiliates, holds less than 40% of the outstanding equity of any Competitor.

1.4 "**Damages**" means any loss, damage, claim or liability (joint or several) to which a party hereto may become subject under the Securities Act, the Exchange Act, or other federal or state law,

insofar as such loss, damage, claim or liability (or any action in respect thereof) arises out of or is based upon: (a) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (b) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (c) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

1.5 "**Derivative Securities**" means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly)**,** Common Stock, including options and warrants.

1.6 "**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

1.7 "**Excluded Registration**" means (a) a registration relating to the sale of securities to employees of the Company or a subsidiary pursuant to a stock option, stock purchase, or similar plan; (b) a registration relating to an SEC Rule 145 transaction; (c) a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (d) a registration in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

1.8 "**FOIA Party**" means a Person that, in the reasonable determination of the Board of Directors, may be subject to, and thereby required to disclose non-public information furnished by or relating to the Company under, the Freedom of Information Act, 5 U.S.C. 552 ("**FOIA**"), any state public records access law, any state or other jurisdiction's laws similar in intent or effect to FOIA, or any other similar statutory or regulatory requirement.

1.9 "**Form S-1**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

1.10 "**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

1.11 "**GAAP**" means generally accepted accounting principles in the United States.

1.12 "**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

1.13 "**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including, adoptive relationships, of a natural person referred to herein.

1.14 "**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

1.15 "**IPO**" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

1.16 "**Major Investor**" means any Investor that, individually or together with such Investor's Affiliates, holds at least 11,140,819 shares of Registrable Securities then outstanding (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof); provided that in the event that Blackwell Partners LLC – Series A ceases to be an Affiliate of RA Capital Healthcare Fund, L.P., (i) RA Capital Healthcare Fund, L.P. shall remain a Major Investor so long as it holds at least 9,243,538 shares of Registrable Securities then outstanding (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof), and (ii) Blackwell Partners LLC – Series A shall immediately and automatically cease to be a Major Investor.

1.17 "**New Securities**" means, collectively, equity securities of the Company, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

1.18 "**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

1.19 "**Preferred Stock**" means, collectively, all shares of the Series B Preferred Stock, Series A-2 Preferred Stock and the Series A Preferred Stock.

1.20 "**Registrable Securities**" means (a) the Common Stock issuable or issued upon conversion of th**e** Preferred Stock; (b) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of any other securities of the Company, acquired by the Investors after the date hereof; and (c) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (a) and (b) above; excluding in all cases, however, any Registrable Securities sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Subsection 7.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Subsection 2.13 of this Agreement.

1.21 "**Registrable Securities then outstanding**" means the number of shares determined by adding the number of shares of outstanding Common Stock that are Registrable Securities and the number of shares of Common Stock issuable (directly or indirectly) pursuant to then exercisable and/or convertible securities that are Registrable Securities.

1.22 "**Restricted Securities**" means the securities of the Company required to be notated with the legend set forth in Subsection 2.12(b) hereof.

1.23 "**SEC**" means the Securities and Exchange Commission.

1.24 "**SEC Rule 144**" means Rule 144 promulgated by the SEC under the Securities Act.

1.25 "**SEC Rule 145**" means Rule 145 promulgated by the SEC under the Securities Act.

1.26 "**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

1.27 "**Selling Expenses**" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Subsection 2.6.

1.28 "**Series A Preferred Stock**" means shares of the Company's Series A Preferred Stock, par value $0.0001 per share.

1.29 "**Series A-2 Preferred Stock**" means shares of the Company's Series A-2 Preferred Stock, par value $0.0001 per share.

1.30 "**Series B Preferred Stock**" means shares of the Company's Series B Preferred Stock, par value $0.0001 per share.

2. Registration Rights.

The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after the earlier of (i) three years after the date of this Agreement or (ii) 180 days after the effective date of the registration statement for the IPO, the Company receives a request from Holders of a majority of the Registrable Securities then outstanding that the Company file a Form S-1 registration statement having an aggregate offering price, net of Selling Expenses, to the public of not less than $10,000,000, then the Company shall (x) within 10 days after the date such request is given, give notice thereof (the "**Demand Notice**") to all Holders other than the Initiating Holders; and (y) as soon as practicable, and in any event within 60 days after the date such request is given by the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within 20 days of the date the Demand Notice is given, and in each case, subject to the limitations of Subsections 2.1(c) and 2.3.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least 20% of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least $1,000,000, then the Company shall (i) within 10 days after the date such request is given, give a Demand Notice to all Holders other than the Initiating Holders; and (ii) as soon as practicable, and in any event within 45 days after the date such request is given by the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within 20 days of the date the Demand Notice is given, and in each case, subject to the limitations of Subsections 2.1(c) and 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Subsection 2.1 a certificate signed by the Company's chief executive officer stating that in the good faith judgment of the Company's Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement to either become effective or remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate

reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; or (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act, then the Company shall have the right to defer taking action with respect to such filing, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than 120 days after the request of the Initiating Holders is given; provided, however, that the Company may not invoke this right more than once in any 12-month period; and provided, further, that the Company shall not register any securities for its own account or that of any other stockholder during such 120 day period other than an Excluded Registration.

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Subsection 2.1(a) (i) during the period that is 60 days before the Company's good faith estimate of the date of filing of, and ending on a date that is 180 days after the effective date of, a Company-initiated registration; provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; (ii) after the Company has effected two registrations pursuant to Subsection 2.1(a); or (iii) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on Form S-3 pursuant to a request made pursuant to Subsection 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Subsection 2.1(b) (x) during the period that is 30 days before the Company's good faith estimate of the date of filing of, and ending on a date that is 90 days after the effective date of, a Company-initiated registration, provided that the Company is actively employing in good faith commercially reasonable efforts to cause such registration statement to become effective; or (y) if the Company has effected two registrations pursuant to Subsection 2.1(b) within the 12 month period immediately preceding the date of such request. A registration shall not be counted as "effected" for purposes of this Subsection 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC, unless the Initiating Holders withdraw their request for such registration, elect not to pay the registration expenses therefor, and forfeit their right to one demand registration statement pursuant to Subsection 2.6, in which case such withdrawn registration statement shall be counted as "effected" for purposes of this Subsection 2.1(d).

2.2 Company Registration.

If the Company proposes to register (including, for this purpose, a registration effected by the Company for stockholders other than the Holders) any of its Common Stock under the Securities Act in connection with the public offering of such securities solely for cash (other than in an Excluded Registration), the Company shall, at such time, promptly give each Holder notice of such registration. Upon the request of each Holder given within 20 days after such notice is given by the Company, the Company shall, subject to the provisions of Subsection 2.3, cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Subsection 2.2 before the effective date of such registration, whether or not any Holder has elected to include Registrable Securities in such registration. The expenses (other than Selling Expenses) of such withdrawn registration shall be borne by the Company in accordance with Subsection 2.6.

2.3 Underwriting Requirements.

(a) If, pursuant to Subsection 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Subsection 2.1, and the Company shall include such information in the Demand Notice. The underwriter(s) will be selected by the Initiating Holders, subject only to the reasonable approval of the Company. In such event, the right of any Holder to include such

Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Subsection 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Subsection 2.3, if the managing underwriter(s) advise(s) the Initiating Holders in writing that marketing factors require a limitation on the number of shares to be underwritten, then the Initiating Holders shall so advise all Holders of Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities that may be included in the underwriting shall be allocated among such Holders of Registrable Securities, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by all such selling Holders; provided, however, that the number of Registrable Securities held by the Holders to be included in such underwriting shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Subsection 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, which the underwriters and the Company in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be allocated among the selling Holders in proportion (as nearly as practicable to) the number of Registrable Securities owned by each selling Holder or in such other proportions as shall mutually be agreed to by all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering, or (ii) the number of Registrable Securities included in the offering be reduced below 25% of the total number of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded further if the underwriters make the determination described above and no other stockholder's securities are included in such offering. For purposes of the provision in this Subsection 2.3(a) concerning apportionment, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such Holder, or the estates and Immediate Family Members of any such partners, retired partners, members, and retired members and any trusts for the benefit of any of the foregoing Persons, shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such "selling Holder," as defined in this sentence.

(c) For purposes of Subsection 2.1, a registration shall not be counted as "effected" if, as a result of an exercise of the underwriter's cutback provisions in Subsection 2.3(a), fewer

than 50% of the total number of Registrable Securities that Holders have requested to be included in such registration statement are actually included.

2.4 Obligations of the Company.

Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to 120 days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that (i) such 120 day period shall be extended for a period of time equal to the period the Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration, and (ii) in the case of any registration of Registrable Securities on Form S-3 that are intended to be offered on a continuous or delayed basis, subject to compliance with applicable SEC rules, such 120 day period shall be extended for up to 60 days, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) use its commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(f) use its commercially reasonable efforts to cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any

attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

In addition, the Company shall ensure that, at all times after any registration statement covering a public offering of securities of the Company under the Securities Act shall have become effective, its insider trading policy shall provide that the Company's directors may implement a trading program under Rule 10b5-1 of the Exchange Act.

2.5 Furnish Information.

It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration.

All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Subsection 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit their right to one registration pursuant to Subsections 2.1(a) or 2.1(b), as the case may be; provided further that if, at the time of such withdrawal, the Holders shall have learned of a material adverse change in the condition, business, or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness after learning of such information then the Holders shall not be required to pay any of such expenses and shall not forfeit their right to one registration pursuant to Subsections 2.1(a) or 2.1(b). All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7 Delay of Registration.

No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification.

If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Subsection 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any), who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter (as defined in the Securities Act), any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Subsection 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Subsections 2.8(b) and 2.8(c) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Subsection 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Subsection 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be

represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either: (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Subsection 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Subsection 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Subsection 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case (x) no Holder will be required to contribute any amount in excess of the public offering price of all such Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Subsection 2.8(c), when combined with the amounts paid or payable by such Holder pursuant to Subsection 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Subsection 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9 Reports Under Exchange Act.

With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use commercially reasonable efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate, a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after 90 days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company; and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10 Limitations on Subsequent Registration Rights.

From and after the date of this Agreement, the Company shall not, without the prior written consent of the holders of (a) a majority of the then-outstanding shares of Series A Preferred Stock and Series A-2 Preferred Stock, voting as a single class and (b) a majority of the outstanding Series B Preferred Stock voting together as a single class (clauses (a) and (b) collectively, the "**Requisite Holders**"), enter into any agreement with any holder or prospective holder of any securities of the Company that (i) would provide to such holder the right to include securities in any registration on other than either a pro rata basis with respect to the Registrable Securities or on a subordinate basis after all Holders have had the opportunity to include in the registration and offering all shares of Registrable Securities that they wish to so include; or (ii) allow such holder or prospective holder to initiate a demand for registration of any securities held by such holder or prospective holder; provided that this limitation shall not apply to any additional Investor who becomes a party to this Agreement in accordance with Subsection 7.9.

2.11 "Market Stand-off" Agreement.

Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to an IPO and ending on the date specified by the Company and the managing underwriter (such period not to exceed 180 days, or such other period as may be requested by the Company or an underwriter to accommodate regulatory restrictions on (1) the publication or other distribution of research reports, and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2711(f)(4) or NYSE Rule 472(f)(4), or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock (whether such shares or any such securities are then owned by the Holder or are thereafter acquired) held immediately before the effective date of the registration statement for such offering or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Subsection 2.11 shall apply only to the IPO, shall not apply to the sale of any shares to an underwriter pursuant to an underwriting agreement, or the transfer of any shares to any trust for the direct or indirect benefit of the Holder or the immediate family of the Holder, provided that the trustee of the trust agrees to be bound in writing by the restrictions set forth herein, and provided, further,

that any such transfer shall not involve a disposition for value, and shall be applicable to the Holders only if all officers and directors are subject to the same restrictions and the Company uses commercially reasonable efforts to obtain a similar agreement from all stockholders individually owning more than one percent of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock). The underwriters in connection with such registration are intended third-party beneficiaries of this Subsection 2.11 and shall have the right, power and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Subsection 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Company stockholders that are subject to such agreements, based on the number of shares subject to such agreements.

2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate, instrument, or book entry representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Subsection 2.12(c)) be notated with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Subsection 2.12.

(c) The holder of such Restricted Securities, by acceptance of ownership thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested

by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144; or (y) in any transaction in which such Holder distributes Restricted Securities to an Affiliate of such Holder; provided that each transferee agrees in writing to be subject to the terms of this Subsection 2.12. Each certificate, instrument, or book entry representing the Restricted Securities transferred as above provided shall be notated with, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Subsection 2.12(b), except that such certificate instrument, or book entry shall not be notated with such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights.

The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Subsections 2.1 or 2.2 shall terminate upon the earliest to occur of:

(a) the fifth anniversary of the IPO; and

(b) with respect to each Holder, such time following the IPO as all Registrable Securities of such holder may be sold within a three month period pursuant to Rule 144.

3. Information and Observer Rights.

3.1 Delivery of Financial Statements.

The Company shall deliver to each Major Investor:

(a) as soon as practicable, but in any event within 45 days after the end of each fiscal year of the Company (i) an unaudited balance sheet as of the end of such year, (ii) unaudited statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined below) for such year, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such year, all prepared in accordance with GAAP (except that such financial statements may (1) be subject to normal year-end audit adjustments; and (2) not contain all notes thereto that may be required in accordance with GAAP);

(b) as soon as practicable, but in any event within 120 days after the end of each fiscal year of the Company (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and a comparison between (x) the actual amounts as of and for such fiscal year and (y) the comparable amounts for the prior year and as included in the Budget (as defined below) for such year, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such year, and (iii) a statement of stockholders' equity as of the end of such

year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(c) as soon as practicable, but in any event within 45 days after the end of each of the first three quarters of each fiscal year of the Company, (i) unaudited statements of income and cash flows for such fiscal quarter, and a comparison between (x) the actual amounts as of and for such fiscal quarter and (y) the comparable amounts for the prior quarter and as included in the Budget (as defined in below) for such quarter, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such quarter, and (ii) an unaudited balance sheet and a statement of stockholders' equity as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (1) be subject to normal year-end audit adjustments; and (2) not contain all notes thereto that may be required in accordance with GAAP);

(d) as soon as practicable, but in any event within 30 days of the end of each month, (i) an unaudited income statement and statement of cash flows for such month, and a comparison between (x) the actual amounts as of and for such month and (y) the comparable amounts for the prior month and as included in the Budget (as defined below) for such month, with an explanation of any material differences between such amounts and a schedule as to the sources and applications of funds for such month, and (ii) an unaudited balance sheet and statement of stockholders' equity as of the end of such month, all prepared in accordance with GAAP (except that such financial statements may (1) be subject to normal year-end audit adjustments and (2) not contain all notes thereto that may be required in accordance with GAAP); and

(e) as soon as practicable, but in any event 30 days before the end of each fiscal year, a budget and business plan for the next fiscal year (collectively, the "**Budget**"), approved by the Board of Directors and prepared on a monthly basis, including balance sheets, income statements, and statements of cash flow for such months and, promptly after prepared, any other budgets or revised budgets prepared by the Company.

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to the foregoing sections shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

Notwithstanding anything else in this Subsection 3.1 to the contrary, the Company may cease providing the information set forth in this Subsection 3.1 during the period starting with the date 60 days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Subsection 3.1 shall be reinstated at such time as the Company is no longer actively employing its commercially reasonable efforts to cause such registration statement to become effective.

3.2 Inspection.

The Company shall permit each Major Investor, at such Major Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Subsection 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company (it being understood that the provisions of

Subsection 3.5 hereof are acceptable to the Company for this purpose) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel.

3.3 Termination of Information Rights.

The covenants set forth in Subsection 3.1 and Subsection 3.2 shall terminate and be of no further force or effect (a) immediately before the consummation of the IPO, (b) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (c) upon a Deemed Liquidation Event, as such term is defined in the Company's certificate of incorporation, whichever event occurs first.

3.4 Observer Rights.

(a) As long as RTW Master Fund, Ltd., RTW Innovation Master Fund, Ltd. or any of their respective Affiliates (collectively, "**RTW**") hold any shares of Preferred Stock (or shares of Common Stock issued upon conversion thereof), the Company shall invite a representative of RTW to attend all meetings of the Board of Directors in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a direct conflict of interest, or if such Investor or its representative is a Competitor of the Company. RTW shall be responsible to the Company for any disclosure or misuse of any information provided under this Subsection 3.4(a) that results from its representative's failure to comply with this Subsection 3.4(a).

(b) As long as Apple Tree Partners IV, L.P. or any of its Affiliates ("**ATP**") holds any shares of Preferred Stock (or shares of Common Stock issued upon conversion thereof) the Company shall invite a representative of ATP to attend all meetings of the Board of Directors in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest, or if such Investor or its representative is a Competitor of the Company. ATP shall be responsible to the Company for any disclosure or misuse of any information provided under this Subsection 3.4(b) that results from its representative's failure to comply with this Subsection 3.4(b).

(c) As long as Cormorant Private Healthcare Fund I, LP or any of its Affiliates ("**Cormorant**") holds any shares of Preferred Stock (or shares of Common Stock issued upon conversion thereof) the Company shall invite a representative of Cormorant to attend all meetings of the Board of Directors in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest, or if such Investor or its representative is a Competitor of the Company. Cormorant shall be responsible to the Company for any disclosure or misuse of any information

provided under this Section 3.4(c) that results from its representative's failure to comply with this Subsection 3.4(c).

(d) As long as RA Capital Healthcare Fund, L.P. or any of its Affiliates ("**RA Capital**") holds any shares of Preferred Stock (or shares of Common Stock issued upon conversion thereof) the Company shall invite a representative of RA Capital to attend all meetings of the Board of Directors in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust with respect to all information so provided; and provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or result in disclosure of trade secrets or a conflict of interest, or if such Investor or its representative is a Competitor of the Company. RA Capital shall be responsible to the Company for any disclosure or misuse of any information provided under this Section 3.4(d) that results from its representative's failure to comply with this Subsection 3.4(d).

3.5 Confidentiality.

Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than to monitor its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public in general (other than as a result of a breach of this Subsection 3.5 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality such third party may have to the Company; provided, however, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Subsection 3.5; (iii) to any existing or prospective Affiliate, partner, member, stockholder, or wholly owned subsidiary of such Investor in the ordinary course of business, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information; or (iv) as may otherwise be required by law, provided that the Investor promptly notifies the Company of such disclosure and takes reasonable steps to minimize the extent of any such required disclosure.

4. Rights to Future Stock Issuances.

4.1 Right of First Offer.

Subject to the terms and conditions of this Subsection 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to each Major Investor. A Major Investor shall be entitled to apportion the right of first offer hereby granted to it in such proportions as it deems appropriate, among (a) itself, (b) its Affiliates and (c) its beneficial interest holders, such as limited partners, members or any other Person having "beneficial ownership," as such term is defined in Rule 13d-3 promulgated under the Exchange Act, of such Major Investor ("**Investor Beneficial Owners**"); provided that each such Affiliate or Investor Beneficial Owner (i) is not a Competitor or FOIA Party, unless such party's purchase of New Securities is otherwise consented to by the Board of Directors, (ii) agrees to enter into this Agreement and each of the Amended and Restated Voting Agreement and the Amended and Restated Right of First Refusal and Co-Sale Agreement of even date herewith among

the Company, the Investors and the other parties named therein, as an "**Investor**" under each such agreement (provided that any Competitor or FOIA Party shall not be entitled to any rights as a Major Investor under Subsections 3.1, 3.2 and 4.1 hereof), and (iii) agrees to purchase at least such number of New Securities as are allocable hereunder to the Major Investor holding the fewest number of shares of Preferred Stock and any other Derivative Securities.

(a) The Company shall give notice (the "**Offer Notice**") to each Major Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within 20 days after the Offer Notice is given, each Major Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock then held by such Major Investor (including all shares of Common Stock then issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held by such Major Investor) bears to the total Common Stock of the Company then held by all the Major Investors (including all shares of Common Stock issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and other Derivative Securities then held by the Major Investors). At the expiration of such 20 day period, the Company shall promptly notify each Major Investor that elects to purchase or acquire all the shares available to it (each, a "**Fully Exercising Investor**") of any other Major Investor's failure to do likewise. During the 10 day period commencing after the Company has given such notice, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the New Securities for which Major Investors were entitled to subscribe but that were not subscribed for by the Major Investors which is equal to the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase such unsubscribed shares. The closing of any sale pursuant to this Subsection 4.1(b) shall occur within the later of 120 days of the date that the Offer Notice is given and the date of initial sale of New Securities pursuant to Subsection 4.1(c).

(c) If all New Securities referred to in the Offer Notice are not elected to be purchased or acquired as provided in Subsection 4.1(b), the Company may, during the 90 day period following the expiration of the periods provided in Subsection 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within 30 days of the execution thereof, the right provided hereunder shall be deemed to be revived and such New Securities shall not be offered unless first reoffered to the Major Investors in accordance with this Subsection 4.1.

(d) The right of first offer in this Subsection 4.1 shall not be applicable to (i) Exempted Securities (as defined in the Company's certificate of incorporation); and (ii) shares of Common Stock issued in the IPO.

(e) Notwithstanding any provision hereof to the contrary, in lieu of complying with the provisions of this Subsection 4.1, the Company may elect to give notice to the Major Investors within 30 days after the issuance of New Securities. Such notice shall describe the type, price, and terms

of the New Securities. Each Major Investor shall have 20 days from the date notice is given to elect to purchase up to the number of New Securities that would, if purchased by such Major Investor, maintain such Major Investor's percentage-ownership position, calculated as set forth in Subsection 4.1(b) before giving effect to the issuance of such New Securities. The closing of such sale shall occur within 60 days of the date notice is given to the Major Investors.

4.2 Termination.

The covenants set forth in Subsection 4.1 shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon a Deemed Liquidation Event, as such term is defined in the Company's certificate of incorporation, whichever event occurs first.

5. Public Offering Participation Right.

5.1 Public Offering.

In connection with the Company's IPO, the Company shall, within a reasonable period of time preceding the consummation of the IPO, offer each of RTW and ATP (each, a "**Specified Investor**," collectively, the "**Specified Investors**") the opportunity to purchase shares of Common Stock to be sold in the IPO (without regard to the exercise of any over-allotment option by the underwriters to the IPO)at the same price per share at which the securities offered in the IPO are being offered to the public (such right, the "**Public Offering Participation Right**"). If a Specified Investor exercises its Public Offering Participation Right, such Specified Investor shall have the right to purchase up to a number of shares of Common Stock to be sold in the IPO equal to (i) the Participation Right Percentage (as defined below), multipled by, (ii) the aggregate number of shares of Common Stock to be sold in the IPO. Each Specified Investor may assign its Public Offering Participation Right to an Affiliate. For the avoidance of doubt, nothing in this Section 5 shall limit the number of shares that each Specified Investor or its Affiliates may acquire in an IPO outside of its Public Offering Participation Right. For purposes of this Section 5, the "**Participation Right Percentage**" applicable to both RTW and ATP shall be a fraction, the numerator of which shall be equal to one and a half times (1.5x) the number of shares of Common Stock then held by RTW (including all shares of Common Stock then issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and any other Derivative Securities then held by RTW) and the denominator of which shall be the total number of outstanding shares of the Company's Common Stock (including all shares of Common Stock issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock and other Derivative Securities then outstanding).

5.2 Private Placement.

(a) Notwithstanding the foregoing Section 5.1,

(i) in the event that the Company is advised by the SEC, the Financial Industry Regulatory Authority ("**FINRA**"), any stock exchange on which the Company's shares are to be traded ("**Exchange**") or any other regulatory body (or any of their staffs), that the offering or sale of such securities to the Specified Investors as described above in Subsection 5.1 would violate any federal or state securities laws or the rules or regulations of the SEC, FINRA, Exchange, or any other regulatory body, then the Company shall offer to each Specified Investor the right to purchase in a separate private placement (which shall be conducted, in whole or in part, concurrently with the IPO and the closing of which shall be contingent on the closing of the IPO) up to that number of shares of Common Stock such Specified Investor

would have been entitled to purchase pursuant to Subsection 5.1, at the price per share of the securities offered in the IPO (before excluding underwriters' discounts and commissions); and

(ii) in the event that the managing underwriter(s) advise(s) the Specified Investors that marketing factors require a limitation on the number of shares to be underwritten and request(s) that the Specified Investors' Public Offering Participation Right be subject to carve-backs, restrictions or other limitations (the "**Cutback**"), which Cutback shall be applied equally to each of the Specified Investors, then the Company shall offer to each Specified Investor the right to purchase, in a separate private placement (which may be conducted, in whole or in part, concurrently with the IPO), up to the difference between the number of shares of Common Stock such Specified Investor would have been able to purchase pursuant to Subsection 5.1 but for the Cutback and the number of shares such Specified Investor was actually permitted to purchase in the IPO pursuant to Subsection 5.1, at the price per share of the securities offered in the IPO (before excluding underwriters' discounts and commissions) (Subsections 5.2(a)(i) and (ii) collectively, the "**Private Sale Participation Right**").

(b) Notwithstanding the foregoing, each Specified Investor agrees that (i) in no event shall the Private Sale Participation Right be exercised in such a manner that, in the reasonable determination of the managing underwriter(s), would materially and adversely affect the IPO and (ii) the number of shares each Specified Investor is entitled to purchase may be reduced or modified to the extent reasonably requested by the Company's underwriter(s) as to not cause such material and adverse effect on the IPO, which reduction or modification shall be applied equally to each of the Specified Investors.

(c) If a Specified Investor exercises its Private Sale Participation Right, the Company and such Specified Investor shall execute and deliver such documents that are (i) customary for a transaction structured as a concurrent private placement with a public offering and (ii) reasonably satisfactory to the Company, such Specified Investor and the managing underwriter(s), if applicable.

5.3 Compliance.

All offers to be made to the Specified Investors under this Section 5 shall be conducted in compliance with all federal and state securities laws and regulations and all applicable rules, regulations and policies of the SEC, any exchange on which the Company's shares are to be listed, or any other regulatory body.

5.4 This Agreement Not an Offer.

This Agreement does not constitute an offer to sell securities of the Company in an IPO. Any offering of the Company's securities in an IPO will only be made pursuant to a prospectus filed with the SEC.

6. Additional Covenants.

6.1 Insurance.

The Company shall use its commercially reasonable efforts to maintain, from financially sound and reputable insurers, Directors and Officers liability insurance in an amount and on terms and conditions satisfactory to the Board of Directors until such time as the Board of Directors determines that such insurance should be discontinued. Notwithstanding any other provision of this Subsection 6.1 to the contrary, for so long as a Preferred Director (as defined in the Company's certificate of incorporation) is serving on the Board of Directors, the Company shall not cease to maintain a Directors and Officers liability insurance policy in an amount of at least $2,000,000 unless approved by such Preferred

Director, and the Company shall annually, within 120 days after the end of each fiscal year of the Company, deliver to the holders of Preferred Stock a certification that such a Directors and Officers liability insurance policy remains in effect.

6.2 Employee Agreements.

The Company will cause each person now or hereafter employed by it or by any subsidiary (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement, and with respect to each person now or hereafter employed by the Company or any subsidiary, such agreement shall include one-year or six-month noncompetition and non-solicitation provisions, unless otherwise approved by the Board of Directors. In addition, the Company shall not amend, modify, terminate, waive, or otherwise alter, in whole or in part, any of the above-referenced agreements or any restricted stock agreement between the Company and any employee, without the unanimous consent of the Preferred Directors.

6.3 Employee Stock.

Unless otherwise approved by the Board of Directors, all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (a) vesting of shares over a four year period, with the first 25% of such shares vesting following 12 months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following 36 months, and (b) a market stand-off provision substantially similar to that in Subsection 2.11. In addition, unless otherwise approved by the Board of Directors, the Company shall retain a "right of first refusal" on employee transfers until the Company's IPO and shall have the right to repurchase unvested shares at cost upon termination of employment of a holder of restricted stock.

6.4 Matters Requiring Investor Director Approval.

So long as the holders of Preferred Stock are entitled to elect a Preferred Director, the Company hereby covenants and agrees with each of the Investors that it shall not, without approval of the Board of Directors, which approval must include the affirmative vote of both of the Preferred Directors:

(a) incur any aggregate indebtedness in excess of $100,000;

(b) make, or permit any subsidiary to make, any loan or advance to, or own any stock or other securities of, any subsidiary or other corporation, partnership, or other entity unless it is wholly owned by the Company;

(c) make, or permit any subsidiary to make, any loan or advance to any Person, including, without limitation, any employee or director of the Company or any subsidiary, except advances and similar expenditures in the ordinary course of business or under the terms of an employee stock or option plan approved by the Board of Directors;

(d) guarantee, directly or indirectly, or permit any subsidiary to guarantee, directly or indirectly, any indebtedness except for trade accounts of the Company or any subsidiary arising in the ordinary course of business;

(e) make any capital expenditures in excess of $100,000 that are not already included in a budget approved by the Board of Directors, other than trade credit incurred in the ordinary course of business;

(f) otherwise enter into or be a party to any transaction with any director, officer, or employee of the Company or any "associate" (as defined in Rule 12b-2 promulgated under the Exchange Act) of any such Person, except for transactions contemplated by this Agreement and the Purchase Agreement; transactions resulting in payments to or by the Company in an aggregate amount less than $60,000 per year; or transactions made in the ordinary course of business and pursuant to reasonable requirements of the Company's business and upon fair and reasonable terms that are approved by a majority of the Board of Directors;

(g) grant any stock option or stock equivalent providing for vesting provisions that differ from the Company's standard vesting schedule or acceleration of vesting upon a change of control of the Company, sale of all or substantially all assets of the Company, termination or similar event;

(h) increase the number of shares reserved for issuance under the Company's equity incentive plans;

(i) create any committee of the Board of Directors;

(j) acquire any corporation, partnership or other entity (whether by stock or asset purchase, merger, consolidation or otherwise);

(k) sell, assign, license, pledge, or encumber material technology or intellectual property, other than licenses granted in the ordinary course of business; or

(l) establish or invest in any subsidiary or joint venture;

(m) change the Company's independent accountants;

(n) approve the annual operating and capital budgets of the Company;

(o) materially change the principal business of the Company or enter material new lines of business;

(p) change the location of the Company's executive office;

(q) grant any salaries for new or existing employees in excess of $200,000 per year; or

(r) hire or terminate the senior executive officers or materially change the compensation of any senior executive officers.

6.5 Board Matters.

Unless otherwise determined by the vote of a majority of the directors then in office, the Board of Directors shall meet at least quarterly in accordance with an agreed-upon schedule. The Company shall reimburse the nonemployee directors for all reasonable out-of-pocket travel expenses incurred (consistent with the Company's travel policy) in connection with attending meetings of the Board of Directors.

6.6 Successor Indemnification.

If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board of Directors as in effect immediately before such transaction, whether such obligations are contained in the Company's bylaws, its certificate of incorporation, or elsewhere, as the case may be.

6.7 Expenses of Counsel.

In the event of a transaction which is a Sale of the Company (as defined in the Second Amended and Restated Voting Agreement of even date herewith among the Company, the Investors and the other parties named therein), the reasonable fees and disbursements of one counsel for the Major Investors ("**Investor Counsel**"), in their capacities as stockholders, shall be borne and paid by the Company. At the outset of considering a transaction which, if consummated would constitute a Sale of the Company, the Company shall obtain the ability to share with the Investor Counsel (and such counsel's clients) and shall share the confidential information (including, without limitation, the initial and all subsequent drafts of memoranda of understanding, letters of intent and other transaction documents and related noncompete, employment, consulting and other compensation agreements and plans) pertaining to and memorializing any of the transactions which, individually or when aggregated with others would constitute the Sale of the Company. The Company shall be obligated to share (and cause the Company's counsel and investment bankers to share) such materials when distributed to the Company's executives and/or any one or more of the other parties to such transaction(s). In the event that Investor Counsel deems it appropriate, in its reasonable discretion, to enter into a joint defense agreement or other arrangement to enhance the ability of the parties to protect their communications and other reviewed materials under the attorney client privilege, the Company shall, and shall direct its counsel to, execute and deliver to Investor Counsel and its clients such an agreement in form and substance reasonably acceptable to Investor Counsel. In the event that one or more of the other party or parties to such transactions require the clients of Investor Counsel to enter into a confidentiality agreement and/or joint defense agreement in order to receive such information, then the Company shall share whatever information can be shared without entry into such agreement and shall, at the same time, in good faith work expeditiously to enable Investor Counsel and its clients to negotiate and enter into the appropriate agreement(s) without undue burden to the clients of Investor Counsel.

6.8 Indemnification Matters.

The Company hereby acknowledges that one or more of the directors nominated to serve on the Board of Directors by the Investors (each a "**Fund Director**") may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Investors and certain of their affiliates (collectively, the "**Fund Indemnitors**"). The Company hereby agrees (i) that it is the indemnitor of first resort (*i.e.*, its obligations to any such Fund Director are primary and any obligation of the Fund Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by such Fund Director are secondary), (ii) that it shall be required to advance the full amount of expenses incurred by such Fund Director and shall be liable for the full amount of all expenses, judgments, penalties, fines and amounts paid in settlement by or on behalf of any such Fund Director to the extent legally permitted and as required by the Company's certificate of incorporation or bylaws (or any agreement between the Company and such Fund Director), without regard to any rights such Fund Director may have against the Fund Indemnitors, and, (iii) that it irrevocably waives, relinquishes and releases the Fund Indemnitors from any and all claims against the Fund Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or

payment by the Fund Indemnitors on behalf of any such Fund Director with respect to any claim for which such Fund Director has sought indemnification from the Company shall affect the foregoing and the Fund Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of such Fund Director against the Company.

6.9 Right to Conduct Activities.

The Company hereby agrees and acknowledges that each of ATP and RTW is a professional investment fund, and as such invests in numerous portfolio companies, some of which may be deemed competitive with the Company's business (as currently conducted or as currently propose to be conducted). The Company hereby agrees that, to the extent permitted under applicable law, neither ATP nor RTW shall be liable to the Company for any claim arising out of, or based upon, (a) the investment by ATP or RTW in any entity competitive with the Company, or (b) actions taken by any partner, officer or other representative of ATP or RTW to assist any such competitive company, whether or not such action was taken as a member of the board of directors of such competitive company or otherwise, and whether or not such action has a detrimental effect on the Company; provided, however, that the foregoing shall not relieve (i) any of the Investors from liability associated with the unauthorized disclosure of the Company's confidential information obtained pursuant to this Agreement, or (ii) any director or officer of the Company from any liability associated with his or her fiduciary duties to the Company.

6.11 FCPA.

The Company represents that it shall not (and shall not permit any of its subsidiaries or affiliates or any of its or their respective directors, officers, managers, employees, independent contractors, representatives or agents to) promise, authorize or make any payment to, or otherwise contribute any item of value to, directly or indirectly, to any third party, including any Non-U.S. Official (as (as such term is defined in the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "**FCPA**")), in each case, in violation of the FCPA, the U.K. Bribery Act, or any other applicable anti-bribery or anti-corruption law. The Company further represents that it shall (and shall cause each of its subsidiaries and affiliates to) cease all of its or their respective activities, as well as remediate any actions taken by the Company, its subsidiaries or affiliates, or any of their respective directors, officers, managers, employees, independent contractors, representatives or agents in violation of the FCPA, the U.K. Bribery Act, or any other applicable anti-bribery or anti-corruption law. The Company further represents that it shall (and shall cause each of its subsidiaries and affiliates to) maintain systems of internal controls (including, but not limited to, accounting systems, purchasing systems and billing systems) to ensure compliance with the FCPA, the U.K. Bribery Act, or any other applicable anti-bribery or anti-corruption law. Upon request, the Company agrees to provide responsive information and/or certifications concerning its compliance with applicable anti-corruption laws. The Company shall promptly notify each Investor if the Company becomes aware of any Enforcement Action (as defined in the Purchase Agreement). The Company shall, and shall cause any direct or indirect subsidiary or entity controlled by it, whether now in existence or formed in the future, to comply with the FCPA. The Company shall use its best efforts to cause any direct or indirect subsidiary, whether now in existence or formed in the future, to comply in all material respects with all applicable laws.

6.12 Termination of Covenants.

The covenants set forth in this Section 6, except for Subsections 6.7 and 6.8, shall terminate and be of no further force or effect (a) immediately before the consummation of the IPO or (b) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (c) upon a Deemed Liquidation Event, as such term is defined in the Company's certificate of incorporation, whichever event occurs first.

7. Miscellaneous.

7.1 Successors and Assigns.

The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (a) is an Affiliate of a Holder; (b) is a Holder's Immediate Family Member or trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; or (c) after such transfer, holds at least two percent of the shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations); provided, however, that (i) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (ii) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Subsection 2.11. For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (x) that is an Affiliate or stockholder of a Holder; (y) who is a Holder's Immediate Family Member; or (z) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; provided further that all transferees who would not qualify individually for assignment of rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement. The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and permitted assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

7.2 Governing Law.

This Agreement shall be governed by the internal law of the State of Delaware.

7.3 Counterparts.

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

7.4 Titles and Subtitles.

The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

7.5 Notices.

All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of actual receipt or (a) personal delivery to the party to be notified; (b) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (c) five days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (d) one business day after the business day of deposit with a nationally recognized overnight

courier, freight prepaid, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Subsection 7.5. If notice is given to the Company, a copy shall also be sent to Fenwick & West LLP, 1191 Second Avenue, 10th Floor, Seattle, WA 98101, Attn: Alan C. Smith; email: asmith@fenwick.com and if notice is given to Investors, a copy shall also be given to Covington & Burling LLP , 620 Eighth Avenue, New York, NY 10018 , Attn: Brian Rosenzweig; email: brosenzweig@cov.com; and to Hogan Lovells (US) LLP, 100 International Drive, Suite 2000, Baltimore, Maryland 21202, Attn: Asher M. Rubin; email: asher.rubin@hoganlovells.com; facsimile (410) 659-2701.

7.6 Amendments and Waivers.

Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the Requisite Holders; provided that the Company may in its sole discretion waive compliance with Subsection 2.12(c) (and the Company's failure to object promptly in writing after notification of a proposed assignment allegedly in violation of Subsection 2.12(c) shall be deemed to be a waiver); and provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party. Notwithstanding the foregoing, (a) this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that, subject to the following sentence, a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Investors may nonetheless, by agreement with the Company, purchase securities in such transaction), (b) Subsection 3.4(a) and this clause (b) of Subsection 7.6 may not be amended, modified, terminated or waived without the written consent of RTW, (c) Subsection 3.4(d) and this clause (c) of Subsection 7.6 may not be amended, modified, terminated or waived without the written consent of RA Capital and (d) Section 5 and this clause (d) of Subsection 7.6 may not be amended, modified, terminate or waived without the written consent of each of RTW and ATP. Notwithstanding the foregoing, if, after giving effect to any waiver of Section 4 or any provision pertaining to Section 4 with respect to a particular transaction, a Major Investor purchases securities in such transaction or issuance (such Major Investor, a "***Participating Investor***"), such waiver of the provisions of Section 4 shall be deemed to apply to the other Major Investors only if the Company shall have provided such other Major Investors the opportunity to purchase a proportional number of the securities in such transaction based on the pro rata purchase right of each Major Investor set forth in Section 4, assuming a transaction size determined based upon the amount purchased by the Participating Investor that invested the largest percentage in such transaction. The Company shall give prompt notice of any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination, or waiver. Any amendment, termination, or waiver effected in accordance with this Subsection 7.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

7.7 Severability.

In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision

shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

7.8 Aggregation of Stock.

All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement and such Affiliated persons may apportion such rights as among themselves in any manner they deem appropriate.

7.9 Additional Investors.

Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Company's Series B Preferred Stock after the date hereof, whether pursuant to the Purchase Agreement or otherwise, any purchaser of such shares of Series B Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations as an "Investor" hereunder.

7.10 Entire Agreement.

This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled. Upon the effectiveness of this Agreement, the Prior Agreement shall be deemed amended and restated and superseded and replaced in its entirety by this Agreement, and shall be of no further force or effect.

7.11 Dispute Resolution.

The parties (a) hereby irrevocably and unconditionally submit to the jurisdiction of the state courts of Delaware and to the jurisdiction of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (b) agree not to commence any suit, action or other proceeding arising out of or based upon this Agreement except in the state courts of Delaware or the United States District Court for the District of Delaware, and (c) hereby waive, and agree not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

WAIVER OF JURY TRIAL: EACH PARTY HEREBY WAIVES ITS RIGHTS TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION BASED UPON OR ARISING OUT OF THIS AGREEMENT, THE OTHER TRANSACTION DOCUMENTS, THE SECURITIES OR THE SUBJECT MATTER HEREOF OR THEREOF. THE SCOPE OF THIS WAIVER IS INTENDED TO BE ALL-ENCOMPASSING OF ANY AND ALL DISPUTES THAT MAY BE FILED IN ANY COURT AND THAT RELATE TO THE SUBJECT MATTER OF THIS TRANSACTION, INCLUDING, WITHOUT LIMITATION, CONTRACT CLAIMS, TORT CLAIMS (INCLUDING NEGLIGENCE), BREACH OF DUTY CLAIMS, AND ALL OTHER COMMON LAW AND STATUTORY CLAIMS. THIS SECTION HAS BEEN FULLY DISCUSSED BY EACH OF THE PARTIES HERETO AND THESE PROVISIONS

WILL NOT BE SUBJECT TO ANY EXCEPTIONS. EACH PARTY HERETO HEREBY FURTHER WARRANTS AND REPRESENTS THAT SUCH PARTY HAS REVIEWED THIS WAIVER WITH ITS LEGAL COUNSEL, AND THAT SUCH PARTY KNOWINGLY AND VOLUNTARILY WAIVES ITS JURY TRIAL RIGHTS FOLLOWING CONSULTATION WITH LEGAL COUNSEL.

Each party will bear its own costs in respect of any disputes arising under this Agreement. The prevailing party shall be entitled to reasonable attorney's fees, costs, and necessary disbursements in addition to any other relief to which such party may be entitled. Each of the parties to this Agreement consents to personal jurisdiction for any equitable action sought in the U.S. District Court for the District of Delaware or any court of the State of Delaware having subject matter jurisdiction.

7.12 Delays or Omissions.

No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of such nonbreaching or nondefaulting party, nor shall it be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

7.13 Acknowledgment.

The Company acknowledges that the Investors are in the business of venture capital investing and therefore review the business plans and related proprietary information of many enterprises, including enterprises which may have products or services which compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict the Investors from investing or participating in any particular enterprise whether or not such enterprise has products or services which compete with those of the Company.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

STOKE THERAPEUTICS, INC.

By: /s/ Edward Kaye
Name: Edward Kaye, M.D.
Title: Chief Executive Officer

[SIGNATURE PAGE TO STOKE THERAPEUTICS, INC. SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

RTW MASTER FUND, LTD.

By: /s/ Roderick Wong

Name: Roderick Wong, M.D.
Title: Director

RTW INNOVATION MASTER FUND, LTD.

By: /s/ Roderick Wong

Name: Roderick Wong, M.D.
Title: Director

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

APPLE TREE PARTNERS IV, L.P.

By: ATP III GP, LTD., General Partner

By: /s/ Seth L. Harrison
Name: Seth L. Harrison
Title: Director

[SIGNATURE PAGE TO STOKE THERAPEUTICS, INC. SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

CORMORANT PRIVATE HEALTHCARE FUND I, LP
By: Cormorant Private Healthcare GP, LLC

By: /s/ Bihua Chen
Bihua Chen, Managing Member of the GP

CORMORANT PRIVATE HEALTHCARE FUND II, LP
By: Cormorant Private Healthcare GP, LLC

By: /s/ Bihua Chen
Bihua Chen, Managing Member of the GP

CORMORANT GLOBAL HEALTHCARE MASTER FUND, LP
By: Cormorant Global Healthcare GP, LLC

By: /s/ Bihua Chen
Bihua Chen, Managing Member of the GP

CRMA SPV, LP
By: Cormorant Asset Management, LLC, its Attorney-in-Fact

By: /s/ Bihua Chen
Bihua Chen, CEO, Managing Member

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

RA CAPITAL HEALTHCARE FUND, L.P.
By: RA Capital Management, LLC
Its: General Partner

By: /s/ James Schneider
Name: James Schneider
Title: Authorized Signatory

BLACKWELL PARTNERS LLC – SERIES A

By: /s/ Abayomi A. Adigun
Name: Abayomi A. Adigun
Title: Investment Manager, DUMAC, Inc. Authorized Signatory

By: /s/ W. Brian Humphries
Name: W. Brian Humphries
Title: Assistant Treasurer, DUMAC, Inc. Authorized Signatory

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

PERCEPTIVE LIFE SCIENCES MASTER FUND LTD

By: /s/ James H. Mannix
Name: James H. Mannix
Title: C.O.O.

[SIGNATURE PAGE TO STOKE THERAPEUTICS, INC. SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

JANUS HENDERSON CAPITAL FUNDS PLC on behalf of its series Janus Henderson Global Life Sciences Fund

By: /s/ Andrew Acker
Name: Andrew Acker
Title: Portfolio Manager

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

REDMILE BIOPHARMA INVESTMENTS I, L.P.

By: /s/ Jeremy Green
Name: Jeremy Green
Title: Managing Member of the General Partner and the Management Company

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

SPHERA GLOBAL HEALTHCARE MASTER FUND, LP

By: /s/ Doron Breen
Name: Doron Breen
Title: Director

[SIGNATURE PAGE TO STOKE THERAPEUTICS, INC. SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT]

IN WITNESS WHEREOF, the parties have executed this Second Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

ALEXANDRIA VENTURE INVESTMENTS, LLC,
a Delaware limited liability company

By: ALEXANDRIA REAL ESTATE EQUITIES, INC.,
a Maryland corporation, managing member

By: /s/ Aaron Jacobson
Name: Aaron Jacobson
Title: SVP – Venture Counsel

[SIGNATURE PAGE TO STOKE THERAPEUTICS, INC. SECOND AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT]

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

As Adopted on June 18, 2014
Amended July 15, 2015
Amended February 11, 2016
Amended October 19, 2017 (Effective October 20, 2017)
Amended January 4, 2018
Amended October 12, 2018 (Effective October 15, 2018)

1. PURPOSE. The purpose of this Plan is to provide incentives to attract, retain and motivate eligible persons whose present and potential contributions are important to the success of the Company, its Parent and Subsidiaries by offering eligible persons an opportunity to participate in the Company's future performance through the grant of Awards covering Shares. Capitalized terms not defined in the text are defined in Section 14 hereof. Although this Plan is intended to be a written compensatory benefit plan within the meaning of Rule 701, grants may be made pursuant to this Plan that do not qualify for exemption under Rule 701.

2. SHARES SUBJECT TO THE PLAN.

2.1 Number of Shares Available. Subject to Sections 2.2 and 11 hereof, the total number of Shares reserved and available for grant and issuance pursuant to this Plan will be 46,276,642 Shares. Subject to Sections 2.2 and 11 hereof, Shares subject to Awards that are cancelled, forfeited, settled in cash, used to pay withholding obligations or pay the exercise price of an Option or that expire by their terms at any time will again be available for grant and issuance in connection with other Awards. In the event that Shares previously issued under the Plan are reacquired by the Company pursuant to a forfeiture provision, right of first refusal, or repurchase by the Company, such Shares shall be added to the number of Shares then available for issuance under the Plan. At all times the Company will reserve and keep available a sufficient number of Shares as will be required to satisfy the requirements of all Awards granted and outstanding under this Plan. In no event shall the total number of Shares issued (counting each reissuance of a Share that was previously issued and then forfeited or repurchased by the Company as a separate issuance) under the Plan upon exercise of ISOs exceed 92,553,284 Shares (adjusted in proportion to any adjustments under Section 2.2 hereof) over the term of the Plan (the "***ISO Limit***"). Subject to Sections 2.2 and 11 hereof, in the event that the number of Shares reserved for issuance under the Plan is increased, the ISO Limit shall be automatically increased by such number of Shares such that the ISO Limit equals (a) two (2) multiplied by (b) the number of Shares reserved for issuance under the Plan.

2.2 Adjustment of Shares. In the event that the number of outstanding shares of the Company's Common Stock is changed by a stock dividend, recapitalization, stock split, reverse stock split, subdivision, combination, reclassification or other change in the capital structure of the Company affecting Shares without consideration, then in order to prevent diminution or enlargement of the benefits or potential benefits intended to be made available

under the Plan (a) the number of Shares reserved for issuance under this Plan, (b) the Exercise Prices of and number of Shares subject to outstanding Options and SARs, and (c) the Purchase Prices of and/or number of Shares subject to other outstanding Awards will (to the extent appropriate) be proportionately adjusted, subject to any required action by the Board or the stockholders of the Company and compliance with applicable securities laws; *provided*, *however*, that fractions of a Share will not be issued but will either be paid in cash at the Fair Market Value of such fraction of a Share or will be rounded down to the nearest whole Share, as determined by the Committee.

3. PLAN FOR BENEFIT OF SERVICE PROVIDERS.

3.1 Eligibility. The Committee will have the authority to select persons to receive Awards. ISOs (as defined in Section 4 hereof) may be granted only to employees (including officers and directors who are also employees) of the Company or of a Parent or Subsidiary of the Company. NQSOs (as defined in Section 4 hereof) and all other types of Awards may be granted to employees, officers, directors and consultants of the Company or any Parent or Subsidiary of the Company; *provided* such consultants render bona fide services not in connection with the offer and sale of securities in a capital-raising transaction when Rule 701 is to apply to the Award granted for such services. A person may be granted more than one Award under this Plan.

3.2 No Obligation to Employ. Nothing in this Plan or any Award granted under this Plan will confer or be deemed to confer on any Participant any right to continue in the employ of, or to continue any other relationship with, the Company or any Parent or Subsidiary or limit in any way the right of the Company or any Parent or Subsidiary to terminate Participant's employment or other relationship at any time, with or without Cause.

4. OPTIONS. The Committee may grant Options to eligible persons described in Section 3 hereof and will determine whether such Options will be Incentive Stock Options within the meaning of the Code ("***ISOs***") or Nonqualified Stock Options ("***NQSOs***"), the number of Shares subject to the Option, the Exercise Price of the Option, the period during which the Option may be exercised, and all other terms and conditions of the Option, subject to the following.

4.1 Form of Option Grant. Each Option granted under this Plan will be evidenced by an Award Agreement which will expressly identify the Option as an ISO or an NQSO ("***Stock Option Agreement***"), and will be in such form and contain such provisions (which need not be the same for each Participant) as the Committee may from time to time approve, and which will comply with and be subject to the terms and conditions of this Plan.

4.2 Date of Grant. The date of grant of an Option will be the date on which the Committee makes the determination to grant such Option, unless a later date is otherwise specified by the Committee. The Stock Option Agreement and a copy of this Plan will be delivered to the Participant within a reasonable time after the granting of the Option.

4.3 Exercise Period. Options may be exercisable within the time or upon the events determined by the Committee in the Award Agreement and may be awarded as

immediately exercisable but subject to repurchase pursuant to Section 10 hereof or may be exercisable within the times or upon the events determined by the Committee as set forth in the Stock Option Agreement governing such Option; *provided*, *however*, that (a) no Option will be exercisable after the expiration of ten (10) years from the date the Option is granted; and (b) no ISO granted to a person who directly or by attribution owns more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or of any Parent or Subsidiary ("***Ten Percent Stockholder***") will be exercisable after the expiration of five (5) years from the date the ISO is granted. The Committee also may provide for Options to become exercisable at one time or from time to time, periodically or otherwise, in such number of Shares or percentage of Shares as the Committee determines.

4.4 Exercise Price. The Exercise Price of an Option will be determined by the Committee when the Option is granted and shall not be less than the Fair Market Value per Share unless expressly determined in writing by the Committee on the Option's date of grant; *provided* that the Exercise Price of an ISO granted to a Ten Percent Stockholder will not be less than one hundred ten percent (110%) of the Fair Market Value of the Shares on the date of grant. Payment for the Shares purchased must be made in accordance with Section 8 hereof.

4.5 Method of Exercise. Options may be exercised only by delivery to the Company of a written stock option exercise agreement (the "***Exercise Agreement***") in a form approved by the Committee (which need not be the same for each Participant). The Exercise Agreement will state (a) the number of Shares being purchased, (b) the restrictions imposed on the Shares purchased under such Exercise Agreement, if any, and (c) such representations and agreements regarding Participant's investment intent and access to information and other matters, if any, as may be required or desirable by the Company to comply with applicable securities laws. Each Participant's Exercise Agreement may be modified by (i) agreement of Participant and the Company or (ii) substitution by the Company, upon becoming a public company, in order to add the payment terms set forth in Section 8.1 that apply to a public company and such other terms as shall be necessary or advisable in order to exercise a public company option. Upon exercise of an Option, Participant shall execute and deliver to the Company the Exercise Agreement then in effect, together with payment in full of the Exercise Price for the number of Shares being purchased and payment of any applicable taxes. No adjustment will be made for a dividend or other right for which the record date is prior to the date the Shares are issued, except as provided in Section 2.2 of the Plan. Exercising an Option in any manner will decrease the number of Shares thereafter available, both for purposes of the Plan and for sale under the Option, by the number of Shares as to which the Option is exercised.

4.6 Termination. Subject to earlier termination pursuant to Sections 11 and 13.3 hereof and notwithstanding the exercise periods set forth in the Stock Option Agreement, exercise of an Option will always be subject to the following terms and conditions.

4.6.1 Other than Death or Disability or for Cause. If the Participant is Terminated for any reason other than death, Disability or for Cause, then the Participant may exercise such Participant's Options only to the extent that such Options are exercisable as to Vested Shares upon the Termination Date or as otherwise determined by the Committee. Such Options must be exercised by the Participant, if at all, as to all or some of the Vested Shares calculated as of the Termination Date or such other date determined by the Committee, within

three (3) months after the Termination Date (or within such shorter time period, not less than thirty (30) days, or within such longer time period after the Termination Date as may be determined by the Committee, with any exercise beyond three (3) months after the date Participant ceases to be an employee deemed to be an NQSO) but in any event, no later than the expiration date of the Options.

4.6.2 Death or Disability. If the Participant is Terminated because of Participant's death or Disability (or the Participant dies within three (3) months after a Termination other than for Cause), then Participant's Options may be exercised only to the extent that such Options are exercisable as to Vested Shares by Participant on the Termination Date or as otherwise determined by the Committee. Such options must be exercised by Participant (or Participant's legal representative or authorized assignee), if at all, as to all or some of the Vested Shares calculated as of the Termination Date or such other date determined by the Committee, within twelve (12) months after the Termination Date (or within such shorter time period, not less than six (6) months, or within such longer time period, after the Termination Date as may be determined by the Committee, with any exercise beyond (a) three (3) months after the date Participant ceases to be an employee when the Termination is for any reason other than the Participant's death or disability, within the meaning of Section 22(e)(3) of the Code, or (b) twelve (12) months after the date Participant ceases to be an employee when the Termination is for Participant's disability, within the meaning of Section 22(e)(3) of the Code, deemed to be an NQSO) but in any event no later than the expiration date of the Options.

4.6.3 For Cause. If the Participant is terminated for Cause, the Participant may exercise such Participant's Options, but not to an extent greater than such Options are exercisable as to Vested Shares upon the Termination Date and Participant's Options shall expire on such Participant's Termination Date, or at such later time and on such conditions as are determined by the Committee.

4.7 Limitations on Exercise. The Committee may specify a reasonable minimum number of Shares that may be purchased on any exercise of an Option, *provided* that such minimum number will not prevent Participant from exercising the Option for the full number of Shares for which it is then exercisable.

4.8 Limitations on ISOs. The aggregate Fair Market Value (determined as of the date of grant) of Shares with respect to which ISOs are exercisable for the first time by a Participant during any calendar year (under this Plan or under any other incentive stock option plan of the Company or any Parent or Subsidiary of the Company) will not exceed One Hundred Thousand Dollars ($100,000). If the Fair Market Value of Shares on the date of grant with respect to which ISOs are exercisable for the first time by a Participant during any calendar year exceeds One Hundred Thousand Dollars ($100,000), then the Options for the first One Hundred Thousand Dollars ($100,000) worth of Shares to become exercisable in such calendar year will be ISOs and the Options for the amount in excess of One Hundred Thousand Dollars ($100,000) that become exercisable in that calendar year will be NQSOs. In the event that the Code or the regulations promulgated thereunder are amended after the Effective Date (as defined in Section 13.1 hereof) to provide for a different limit on the Fair Market Value of Shares permitted to be subject to ISOs, then such different limit will be automatically incorporated herein and will apply to any Options granted after the effective date of such amendment.

4.9 Modification, Extension or Renewal. The Committee may modify, extend or renew outstanding Options and authorize the grant of new Options in substitution therefor, *provided* that any such action may not, without the written consent of a Participant, impair any of such Participant's rights under any Option previously granted. Any outstanding ISO that is modified, extended, renewed or otherwise altered will be treated in accordance with Section 424(h) of the Code. Subject to Section 4.10 hereof, the Committee may reduce the Exercise Price of outstanding Options without the consent of Participants by a written notice to them; *provided*, *however*, that the Exercise Price may not be reduced below the minimum Exercise Price that would be permitted under Section 4.4 hereof for Options granted on the date the action is taken to reduce the Exercise Price.

4.10 No Disqualification. Notwithstanding any other provision in this Plan, no term of this Plan relating to ISOs will be interpreted, amended or altered, nor will any discretion or authority granted under this Plan be exercised, so as to disqualify this Plan under Section 422 of the Code or, without the consent of the Participant, to disqualify any Participant's ISO under Section 422 of the Code.

5. RESTRICTED STOCK. A Restricted Stock Award is an offer by the Company to sell to an eligible person Shares that are subject to certain specified restrictions. The Committee will determine to whom an offer will be made, the number of Shares the person may purchase, the Purchase Price, the restrictions to which the Shares will be subject, and all other terms and conditions of the Restricted Stock Award, subject to the following terms and conditions.

5.1 Form of Restricted Stock Award. All purchases under a Restricted Stock Award made pursuant to this Plan will be evidenced by an Award Agreement ("***Restricted Stock Purchase Agreement***") that will be in such form (which need not be the same for each Participant) as the Committee will from time to time approve, and will comply with and be subject to the terms and conditions of this Plan. The Restricted Stock Award will be accepted by the Participant's execution and delivery of the Restricted Stock Purchase Agreement and full payment for the Shares to the Company within thirty (30) days from the date the Restricted Stock Purchase Agreement is delivered to the person. If such person does not execute and deliver the Restricted Stock Purchase Agreement along with full payment for the Shares to the Company within such thirty (30) days, then the offer will terminate, unless otherwise determined by the Committee.

5.2 Purchase Price. The Purchase Price of Shares sold pursuant to a Restricted Stock Award will be determined by the Committee on the date the Restricted Stock Award is granted or at the time the purchase is consummated. Payment of the Purchase Price must be made in accordance with Section 8 hereof.

5.3 Dividends and Other Distributions. Participants holding Restricted Stock will be entitled to receive all dividends and other distributions paid with respect to such Shares, unless the Committee provides otherwise at the time of award. If any such dividends or distributions are paid in Shares, the Shares will be subject to the same restrictions on transferability and forfeitability as the Shares of Restricted Stock with respect to which they were paid.

5.4 Restrictions. Restricted Stock Awards may be subject to the restrictions set forth in Sections 9 and 10 hereof.

6. RESTRICTED STOCK UNITS.

6.1 Awards of Restricted Stock Units. A Restricted Stock Unit ("***RSU***") is an Award covering a number of Shares that may be settled in cash, or by issuance of those Shares at a date in the future. No Purchase Price shall apply to an RSU settled in Shares. All grants of Restricted Stock Units will be evidenced by an Award Agreement that will be in such form (which need not be the same for each Participant) as the Committee will from time to time approve, and will comply with and be subject to the terms and conditions of this Plan.

6.2 Form and Timing of Settlement. To the extent permissible under applicable law, the Committee may permit a Participant to defer payment under a RSU to a date or dates after the RSU is earned, *provided* that the terms of the RSU and any deferral satisfy the requirements of Section 409A of the Code (or any successor) and any regulations or rulings promulgated thereunder. Payment may be made in the form of cash or whole Shares or a combination thereof, all as the Committee determines.

7. STOCK APPRECIATION RIGHTS.

7.1 Awards of SARs. Stock Appreciation Rights ("***SARs***") may be settled in cash, or Shares (which may consist of Restricted Stock or RSUs), having a value equal to the value determined by multiplying the difference between the Fair Market Value on the date of exercise over the Exercise Price and the number of Shares with respect to which the SAR is being settled. All grants of SARs made pursuant to this Plan will be evidenced by an Award Agreement that will be in such form (which need not be the same for each Participant) as the Committee will from time to time approve, and will comply with and be subject to the terms and conditions of this Plan.

7.2 Exercise Period and Expiration Date. A SAR will be exercisable within the times or upon the occurrence of events determined by the Committee and set forth in the Award Agreement governing such SAR. The Award Agreement shall set forth the Expiration Date; *provided* that no SAR will be exercisable after the expiration of ten years from the date the SAR is granted.

7.3 Exercise Price. The Committee will determine the Exercise Price of the SAR when the SAR is granted, and which may not be less than the Fair Market Value on the date of grant and may be settled in cash or in Shares.

7.4 Termination. Subject to earlier termination pursuant to Sections 11 and 13.1 hereof and notwithstanding the exercise periods set forth in the Award Agreement, exercise of SARs will always be subject to the following terms and conditions.

7.4.1 Other than Death or Disability or for Cause. If the Participant is Terminated for any reason other than death, Disability or for Cause, then the Participant may exercise such Participant's SARs only to the extent that such SARs are exercisable as to Vested Shares upon the Termination Date or as otherwise determined by the Committee. SARs must be

exercised by the Participant, if at all, as to all or some of the Vested Shares calculated as of the Termination Date or such other date determined by the Committee, within three (3) months after the Termination Date (or within such shorter time period, not less than thirty (30) days, or within such longer time period after the Termination Date as may be determined by the Committee) but in any event, no later than the expiration date of the SARs.

7.4.2 Death or Disability. If the Participant is Terminated because of Participant's death or Disability (or the Participant dies within three (3) months after a Termination other than for Cause), then Participant's SARs may be exercised only to the extent that such SARs are exercisable as to Vested Shares by Participant on the Termination Date or as otherwise determined by the Committee. Such SARs must be exercised by Participant (or Participant's legal representative or authorized assignee), if at all, as to all or some of the Vested Shares calculated as of the Termination Date or such other date determined by the Committee, within twelve (12) months after the Termination Date (or within such shorter time period, not less than six (6) months, or within such longer time period after the Termination Date as may be determined by the Committee) but in any event no later than the expiration date of the SARs.

7.4.3 For Cause. If the Participant is terminated for Cause, the Participant may exercise such Participant's SARs, but not to an extent greater than such SARs are exercisable as to Vested Shares upon the Termination Date and Participant's SARs shall expire on such Participant's Termination Date, or at such later time and on such conditions as are determined by the Committee.

8. PAYMENT FOR PURCHASES AND EXERCISES.

8.1 Payment in General. Payment for Shares acquired pursuant to this Plan may be made in cash (by check) or, where expressly approved for the Participant by the Committee and where permitted by law:

(a) by cancellation of indebtedness of the Company owed to the Participant;

(b) by surrender of shares of the Company that are clear of all liens, claims, encumbrances or security interests and: (i) for which the Company has received "full payment of the purchase price" within the meaning of SEC Rule 144 (and, if such shares were purchased from the Company by use of a promissory note, such note has been fully paid with respect to such shares) or (ii) that were obtained by Participant in the public market;

(c) by tender of a full recourse promissory note having such terms as may be approved by the Committee and bearing interest at a rate sufficient to avoid imputation of income under Sections 483 and 1274 of the Code; *provided*, *however*, that Participants who are not employees or directors of the Company will not be entitled to purchase Shares with a promissory note unless the note is adequately secured by collateral other than the Shares; *provided*, *further*, that the portion of the Exercise Price or Purchase Price, as the case may be, equal to the par value (if any) of the Shares must be paid in cash or other legal consideration permitted by the laws under which the Company is then incorporated or organized;

(d) by waiver of compensation due or accrued to the Participant from the Company for services rendered;

(e) by participating in a formal cashless exercise program implemented by the Committee in connection with the Plan;

(f) subject to compliance with applicable law, provided that a public market for the Company's Common Stock exists, by exercising through a "same day sale" commitment from the Participant and a broker-dealer whereby the Participant irrevocably elects to exercise the Award and to sell a portion of the Shares so purchased sufficient to pay the total Exercise Price or Purchase Price, and whereby the broker-dealer irrevocably commits upon receipt of such Shares to forward the total Exercise Price or Purchase Price directly to the Company; or

(g) by any combination of the foregoing or any other method of payment approved by the Committee.

8.2 Withholding Taxes.

8.2.1 Withholding Generally. Whenever Shares are to be issued in satisfaction of Awards granted under this Plan, the Company may require the Participant to remit to the Company an amount sufficient to satisfy applicable tax withholding requirements prior to the delivery of any certificate or certificates for such Shares. Whenever, under this Plan, payments in satisfaction of Awards are to be made in cash by the Company, such payment will be net of an amount sufficient to satisfy applicable tax withholding requirements.

8.2.2 Stock Withholding. When, under applicable tax laws, a Participant incurs tax liability in connection with the exercise or vesting of any Award that is subject to tax withholding and the Participant is obligated to pay the Company the amount required to be withheld, the Committee may in its sole discretion allow the Participant to satisfy the minimum tax withholding obligation by electing to have the Company withhold from the Shares to be issued up to the minimum number of Shares having a Fair Market Value on the date that the amount of tax to be withheld is to be determined that is not more than the minimum amount to be withheld; or to arrange a mandatory "sell to cover" on Participant's behalf (without further authorization) but in no event will the Company withhold Shares or "sell to cover" if such withholding would result in adverse accounting consequences to the Company. Any elections to have Shares withheld or sold for this purpose will be made in accordance with the requirements established by the Committee for such elections and be in writing in a form acceptable to the Committee.

9. RESTRICTIONS ON AWARDS.

9.1 Transferability. Except as permitted by the Committee, Awards granted under this Plan, and any interest therein, will not be transferable or assignable by Participant, other than by will or by the laws of descent and distribution, and, with respect to NQSOs, by instrument to an inter vivos or testamentary trust in which the NQSOs are to be passed to beneficiaries upon the death of the trustor (settlor), or by gift to "family member" as that term is defined in Rule 701, and may not be made subject to execution, attachment or similar process.

For the avoidance of doubt, the prohibition against assignment and transfer applies to a stock option and, prior to exercise , the shares to be issued on exercise of a stock option, and pursuant to the foregoing sentence shall be understood to include, without limitation, a prohibition against any pledge, hypothecation, or other transfer, including any short position, any "put equivalent position" or any "call equivalent position" (in each case, as defined in Rule 16a-1 promulgated under the Exchange Act). During the lifetime of the Participant an Award will be exercisable only by the Participant or Participant's legal representative and any elections with respect to an Award may be made only by the Participant or Participant's legal representative. The terms of an Option shall be binding upon the executor, administrator, successors and assigns of the Participant who is a party thereto.

9.2 Securities Law and Other Regulatory Compliance. Although this Plan is intended to be a written compensatory benefit plan within the meaning of Rule 701 promulgated under the Securities Act, grants may be made pursuant to this Plan that do not qualify for exemption under Rule 701. An Award will not be effective unless such Award is in compliance with all applicable federal and state securities laws, rules and regulations of any governmental body, and the requirements of any stock exchange or automated quotation system upon which the Shares may then be listed or quoted, as they are in effect on the date of grant of the Award and also on the date of exercise or other issuance. Notwithstanding any other provision in this Plan, the Company will have no obligation to issue or deliver certificates for Shares under this Plan prior to (a) obtaining any approvals from governmental agencies that the Company determines are necessary or advisable, and/or (b) compliance with any exemption, completion of any registration or other qualification of such Shares under any state or federal law or ruling of any governmental body that the Company determines to be necessary or advisable. The Company will be under no obligation to register the Shares with the SEC or to effect compliance with the exemption, registration, qualification or listing requirements of any state securities laws, stock exchange or automated quotation system, and the Company will have no liability for any inability or failure so do.

9.3 Exchange and Buyout of Awards. The Committee may, at any time or from time to time, authorize the Company, with the consent of the respective Participants, to issue new Awards in exchange for the surrender and cancellation of any or all outstanding Awards. Without prior stockholder approval the Committee may reprice Options or SARs (and where such repricing is a reduction in the Exercise Price of outstanding Options or SARs, the consent of the affected Participants is not required provided written notice is provided to them). The Committee may at any time buy from a Participant an Award previously granted with payment in cash, Shares (including Restricted Stock) or other consideration, based on such terms and conditions as the Committee and the Participant may agree.

10. RESTRICTIONS ON SHARES.

10.1 Privileges of Stock Ownership. No Participant will have any of the rights of a stockholder with respect to any Shares until such Shares are issued to the Participant. After Shares are issued to the Participant, the Participant will be a stockholder and have all the rights of a stockholder with respect to such Shares, including the right to vote and receive all dividends or other distributions made or paid with respect to such Shares; *provided*, that if such Shares are Restricted Stock, then any new, additional or different securities the Participant may

become entitled to receive with respect to such Shares by virtue of a stock dividend, stock split or any other change in the corporate or capital structure of the Company will be subject to the same restrictions as the Restricted Stock. The Participant will have no right to retain such stock dividends or stock distributions with respect to Unvested Shares that are repurchased as described in this Section 10.

10.2 Rights of First Refusal and Repurchase. At the discretion of the Committee, the Company may reserve to itself and/or its assignee(s) in the Award Agreement (a) a right of first refusal to purchase all Shares that a Participant (or a subsequent transferee) may propose to transfer to a third party, *provided* that such right of first refusal terminates upon the Company's initial public offering of Common Stock pursuant to an effective registration statement filed under the Securities Act and (b) a right to repurchase Unvested Shares held by a Participant for cash and/or cancellation of purchase money indebtedness owed to the Company by the Participant following such Participant's Termination at any time.

10.3 Escrow; Pledge of Shares. To enforce any restrictions on a Participant's Shares, the Committee may require the Participant to deposit all certificates representing Shares, together with stock powers or other instruments of transfer approved by the Committee, appropriately endorsed in blank, with the Company or an agent designated by the Company to hold in escrow until such restrictions have lapsed or terminated. The Committee may cause a legend or legends referencing such restrictions to be placed on the certificate. Any Participant who is permitted to execute a promissory note as partial or full consideration for the purchase of Shares under this Plan will be required to pledge and deposit with the Company all or part of the Shares so purchased as collateral to secure the payment of Participant's obligation to the Company under the promissory note; *provided*, *however*, that the Committee may require or accept other or additional forms of collateral to secure the payment of such obligation and, in any event, the Company will have full recourse against the Participant under the promissory note notwithstanding any pledge of the Participant's Shares or other collateral. In connection with any pledge of the Shares, Participant will be required to execute and deliver a written pledge agreement in such form as the Committee will from time to time approve. The Shares purchased with the promissory note may be released from the pledge on a pro rata basis as the promissory note is paid.

10.4 Securities Law Restrictions. All certificates for Shares or other securities delivered under this Plan will be subject to such stock transfer orders, legends and other restrictions as the Committee may deem necessary or advisable, including restrictions under any applicable federal, state or foreign securities law, or any rules, regulations and other requirements of the SEC or any stock exchange or automated quotation system upon which the Shares may be listed or quoted.

11. CORPORATE TRANSACTIONS.

11.1 Acquisitions or Other Combinations. In the event that the Company is subject to an Acquisition or Other Combination, outstanding Awards acquired under the Plan shall be subject to the agreement evidencing the Acquisition or Other Combination, which need not treat all outstanding Awards in an identical manner. Such agreement, without the

Participant's consent, shall provide for one or more of the following with respect to all outstanding Awards as of the effective date of such Acquisition or Other Combination:

(a) The continuation of such outstanding Awards by the Company (if the Company is the successor entity).

(b) The assumption of outstanding Awards by the successor or acquiring entity (if any) in such Acquisition or Other Combination (or by any of its Parents, if any), which assumption, will be binding on all Participants; provided that the exercise price and the number and nature of shares issuable upon exercise of any such option or stock appreciation right, or any award that is subject to Section 409A of the Code, will be adjusted appropriately pursuant to Section 424(a) and Section 409A of the Code. For the purposes of this Section 11, an Award will be considered assumed if, following the Acquisition or Other Combination, the Award confers the right to purchase or receive, for each Share subject to the Award immediately prior to the Acquisition or Other Combination, the consideration (whether stock, cash, or other securities or property) received in the Acquisition or Other Combination by holders of Shares for each Share held on the effective date of the transaction (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding Shares); provided, however, that if such consideration received in the Acquisition or Other Combination is not solely common stock of the successor corporation or its Parent, the Committee may, with the consent of the successor corporation, provide for the consideration to be received upon the exercise of an Option or Stock Appreciation Right or upon the payout of a Restricted Stock Unit, for each Share subject to such Award, to be solely common stock of the successor corporation or its Parent equal in fair market value to the per share consideration received by holders of Common Stock in the Acquisition or Other Combination.

(c) The substitution by the successor or acquiring entity in such Acquisition or Other Combination (or by any of its Parents, if any) of equivalent awards with substantially the same terms for such outstanding Awards (except that the exercise price and the number and nature of shares issuable upon exercise of any such option or stock appreciation right, or any award that is subject to Section 409A of the Code, will be adjusted appropriately pursuant to Section 424(a) of the Code).

(d) The full or partial exercisability or vesting and accelerated expiration of outstanding Awards.

(e) The settlement of the full value of such outstanding Award (whether or not then vested or exercisable) in cash, cash equivalents, or securities of the successor entity (or its Parent, if any) with a Fair Market Value equal to the required amount, followed by the cancellation of such Awards; provided however, that such Award may be cancelled without consideration if such Award has no value, as determined by the Committee, in its discretion. Subject to Section 409A of the Code, such payment may be made in installments and may be deferred until the date or dates when the Award would have become exercisable or vested. Such payment may be subject to vesting based on the Participant's continued service, provided that without the Participant's consent, the vesting schedule shall not be less favorable to the Participant than the schedule under which the Award would have become vested or

exercisable. For purposes of this Section 11.1(e), the Fair Market Value of any security shall be determined without regard to any vesting conditions that may apply to such security.

(f) The cancellation of outstanding Awards in exchange for no consideration.

Immediately following an Acquisition or Other Combination, outstanding Awards shall terminate and cease to be outstanding, except to the extent such Awards, have been continued, assumed or substituted, as described in Sections 11.1(a), (b) and/or (c).

11.2 Assumption of Awards by the Company. The Company, from time to time, also may substitute or assume outstanding awards granted by another entity, whether in connection with an acquisition of such other entity or otherwise, by either (a) granting an Award under this Plan in substitution of such other entity's award or (b) assuming and/or converting such award as if it had been granted under this Plan if the terms of such assumed award could be applied to an Award granted under this Plan. Such substitution or assumption will be permissible if the holder of the substituted or assumed award would have been eligible to be granted an Award under this Plan if the other entity had applied the rules of this Plan to such grant. In the event the Company assumes an award granted by another entity, the terms and conditions of such award will remain unchanged (except that the exercise price and the number and nature of shares issuable upon exercise of any such option or stock appreciation right, or any award that is subject to Section 409A of the Code, will be adjusted appropriately pursuant to Section 424(a) of the Code). In the event the Company elects to grant a new Option or SAR rather than assuming an existing option or stock appreciation right, such new Option or SAR may be granted with a similarly adjusted Exercise Price.

12. ADMINISTRATION.

12.1 Committee Authority. This Plan will be administered by the Committee or the Board if no Committee is created by the Board. Subject to the general purposes, terms and conditions of this Plan, and to the direction of the Board, the Committee will have full power to implement and carry out this Plan. Without limitation, the Committee will have the authority to:

(a) construe and interpret this Plan, any Award Agreement and any other agreement or document executed pursuant to this Plan;

(b) prescribe, amend, expand, modify and rescind or terminate rules and regulations relating to this Plan;

(c) approve persons to receive Awards;

(d) determine the form and terms of Awards;

(e) determine the number of Shares or other consideration subject to Awards granted under this Plan;

(f) determine the Fair Market Value in good faith and interpret the applicable provisions of this Plan and the definition of Fair Market Value in connection with circumstances that impact the Fair Market Value, if necessary;

(g) determine whether Awards will be granted singly, in combination with, in tandem with, in replacement of, or as alternatives to, other Awards under this Plan or awards under any other incentive or compensation plan of the Company or any Parent or Subsidiary of the Company;

(h) grant waivers of any conditions of this Plan or any Award;

(i) determine the terms of vesting, exercisability and payment of Awards to be granted pursuant to this Plan;

(j) correct any defect, supply any omission, or reconcile any inconsistency in this Plan, any Award, any Award Agreement, any Exercise Agreement or any Restricted Stock Purchase Agreement;

(k) determine whether an Award has been earned;

(l) extend the vesting period beyond a Participant's Termination Date;

(m) adopt rules and/or procedures (including the adoption of any subplan under this Plan) relating to the operation and administration of the Plan to accommodate requirements of local law and procedures outside of the United States;

(n) delegate any of the foregoing to a subcommittee consisting of one or more executive officers pursuant to a specific delegation as may otherwise be permitted by applicable law;

(o) change the vesting schedule of Awards under the Plan prospectively in the event that the Participant's service status changes between full and part time status in accordance with Company policies relating to work schedules and vesting of awards; and

(p) make all other determinations necessary or advisable in connection with the administration of this Plan.

12.2 Committee Composition and Discretion. The Board may delegate full administrative authority over the Plan and Awards to a Committee consisting of at least one member of the Board (or such greater number as may then be required by applicable law). Unless in contravention of any express terms of this Plan or Award, any determination made by the Committee with respect to any Award will be made in its sole discretion either (a) at the time of grant of the Award, or (b) subject to Section 4.9 hereof, at any later time. Any such determination will be final and binding on the Company and on all persons having an interest in any Award under this Plan. To the extent permitted by applicable law, the Committee may delegate to one or more officers of the Company the authority to grant an Award under this Plan, *provided* that each such officer is a member of the Board.

12.3 Nonexclusivity of the Plan. Neither the adoption of this Plan by the Board, the submission of this Plan to the stockholders of the Company for approval, nor any provision of this Plan will be construed as creating any limitations on the power of the Board to adopt such additional compensation arrangements as it may deem desirable, including, without limitation, the granting of stock options and other equity awards otherwise than under this Plan, and such arrangements may be either generally applicable or applicable only in specific cases.

12.4 Governing Law. This Plan and all agreements hereunder shall be governed by and construed in accordance with the laws of the State of Delaware, without giving effect to that body of laws pertaining to conflict of laws.

13. EFFECTIVENESS, AMENDMENT AND TERMINATION OF THE PLAN.

13.1 Adoption and Stockholder Approval. This Plan will become effective on the date that it is adopted by the Board (the "***Effective Date***"). This Plan will be approved by the stockholders of the Company (excluding Shares issued pursuant to this Plan), consistent with applicable laws, within twelve (12) months before or after the Effective Date. Upon the Effective Date, the Board may grant Awards pursuant to this Plan; *provided*, *however*, that: (a) no Option or SAR may be exercised prior to initial stockholder approval of this Plan; (b) no Option or SAR granted pursuant to an increase in the number of Shares approved by the Board shall be exercised prior to the time such increase has been approved by the stockholders of the Company; and (c) in the event that initial stockholder approval is not obtained within the time period provided herein, any Shares issued pursuant to any such Award shall be canceled and any purchase of such Shares issued hereunder shall be rescinded.

13.2 Term of Plan. Unless earlier terminated as provided herein, this Plan will automatically terminate ten (10) years after the later of (i) the Effective Date, or (ii) the most recent increase in the number of Shares reserved under Section 2 that was approved by stockholders.

13.3 Amendment or Termination of Plan. Subject to Section 4.9 hereof, the Board may at any time (a) terminate or amend this Plan in any respect, including without limitation amendment of any form of Award Agreement or instrument to be executed pursuant to this Plan and (b) terminate any and all outstanding Options or SARs upon a dissolution or liquidation of the Company, followed by the payment of creditors and the distribution of any remaining funds to the Company's stockholders; *provided*, *however*, that the Board will not, without the approval of the stockholders of the Company, amend this Plan in any manner that requires such stockholder approval pursuant to the Code or the regulations promulgated under the Code as such provisions apply to ISO plans. The termination of the Plan, or any amendment thereof, shall not affect any Share previously issued or any Award previously granted under the Plan

14. DEFINITIONS. For all purposes of this Plan, the following terms will have the following meanings.

"***Acquisition***," for purposes of Section 11, means:

(a) any consolidation or merger in which the Company is a constituent entity or is a party in which the voting stock and other voting securities of the Company that are outstanding immediately prior to the consummation of such consolidation or merger represent, or are converted into, securities of the surviving entity of such consolidation or merger (or of any Parent of such surviving entity) that, immediately after the consummation of such consolidation or merger, together possess less than fifty percent (50%) of the total voting power of all voting securities of such surviving entity (or of any of its Parents, if any) that are outstanding immediately after the consummation of such consolidation or merger;

(b) a sale or other transfer by the holders thereof of outstanding voting stock and/or other voting securities of the Company possessing more than fifty percent (50%) of the total voting power of all outstanding voting securities of the Company, whether in one transaction or in a series of related transactions, pursuant to an agreement or agreements to which the Company is a party and that has been approved by the Board, and pursuant to which such outstanding voting securities are sold or transferred to a single person or entity, to one or more persons or entities who are Affiliates of each other, or to one or more persons or entities acting in concert; or

(c) the sale, lease, transfer or other disposition, in a single transaction or series of related transactions, by the Company and/or any Subsidiary or Subsidiaries of the Company, of all or substantially all the assets of the Company and its Subsidiaries taken as a whole, (or, if substantially all of the assets of the Company and its Subsidiaries taken as a whole are held by one or more Subsidiaries, the sale or disposition (whether by consolidation, merger, conversion or otherwise) of such Subsidiaries of the Company), except where such sale, lease, transfer or other disposition is made to the Company or one or more wholly owned Subsidiaries of the Company (an "***Acquisition by Sale of Assets***").

"Affiliate" of a specified person means a person that directly, or indirectly through one or more intermediaries, controls or is controlled by, or is under common control with, the person specified (where, for purposes of this definition, the term "***control"*** (including the terms ***controlling***, ***controlled by*** and ***under common control with***) means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting securities, by contract, or otherwise.

"***Award***" means any award pursuant to the terms and conditions of this Plan, including any Option, Restricted Stock Unit, Stock Appreciation Right or Restricted Stock Award.

"***Award Agreement***" means, with respect to each Award, the signed written or electronic agreement between the Company and the Participant setting forth the terms and conditions of the Award as approved by the Committee. For purposes of the Plan, the Award Agreement may be executed via written or electronic means.

"***Board***" means the Board of Directors of the Company.

"***Cause***" means Termination because of (a) Participant's unauthorized misuse of the Company or a Parent or Subsidiary of the Company's trade secrets or proprietary information, (b) Participant's conviction of or plea of nolo contendere to a felony or a crime involving moral turpitude, (c) Participant's committing an act of fraud against the Company or a Parent or Subsidiary of the Company or (d) Participant's gross negligence or willful misconduct in the performance of his or her duties that has had or will have a material adverse effect on the Company or Parent or Subsidiary of the Company' reputation or business.

"***Code***" means the Internal Revenue Code of 1986, as amended.

"***Committee***" means the committee created and appointed by the Board to administer this Plan, or if no committee is created and appointed, the Board.

"***Company***" means Stoke Therapeutics, Inc., or any successor corporation.

"***Disability***" means that the Participant is unable to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or can be expected to last for a continuous period of not less than 12 months.

"***Exchange Act***" means the Securities Exchange Act of 1934, as amended.

"***Exercise Price***" means the price per Share at which a holder of an Option may purchase Shares issuable upon exercise of the Option.

"***Fair Market Value***" means, as of any date, the value of a share of the Company's Common Stock determined as follows:

(a) if such Common Stock is then publicly traded on a national securities exchange, its closing price on the date of determination on the principal national securities exchange on which the Common Stock is listed or admitted to trading as reported in The Wall Street Journal;

(b) if such Common Stock is publicly traded but is not listed or admitted to trading on a national securities exchange, the average of the closing bid and asked prices on the date of determination as reported by The Wall Street Journal (or, if not so reported, as otherwise reported by any newspaper or other source as the Committee may determine); or

(c) if none of the foregoing is applicable to the valuation in question, by the Committee in good faith.

"***Option***" means an award of an option to purchase Shares pursuant to Section 4 of this Plan.

"***Other Combination***" for purposes of Section 11 means any (a) consolidation or merger in which the Company is a constituent entity and is not the surviving entity of such consolidation or merger or (b) any conversion of the Company into another form of entity; *provided* that such consolidation, merger or conversion does not constitute an Acquisition.

"***Parent***" of a specified entity means, any entity that, either directly or indirectly, owns or controls such specified entity, where for this purpose, "***control***" means the ownership of stock, securities or other interests that possess at least a majority of the voting power of such specified entity (including indirect ownership or control of such stock, securities or other interests).

"***Participant***" means a person who receives an Award under this Plan.

"***Plan***" means this 2014 Equity Incentive Plan, as amended from time to time.

"***Purchase Price***" means the price at which a Participant may purchase Restricted Stock pursuant to this Plan.

"***Restricted Stock***" means Shares purchased pursuant to a Restricted Stock Award under this Plan.

"***Restricted Stock Award***" means an award of Shares pursuant to Section 5 hereof.

"***Restricted Stock Unit***" or "***RSU***" means an award made pursuant to Section 6 hereof.

"***Rule 701***" means Rule 701 *et seq.* promulgated by the Commission under the Securities Act.

"***SEC***" means the Securities and Exchange Commission.

"***Securities Act***" means the Securities Act of 1933, as amended.

"***Shares***" means shares of the Company's Common Stock reserved for issuance under this Plan, as adjusted pursuant to Sections 2.2 and 11 hereof, and any successor security.

"***Stock Appreciation Right***" or "***SAR***" means an award granted pursuant to Section 7 hereof.

"***Subsidiary***" means any entity (other than the Company) in an unbroken chain of entities beginning with the Company if each of the entities other than the last entity in the unbroken chain owns stock or other equity securities representing fifty percent (50%) or more of the total combined voting power of all classes of stock or other equity securities in one of the other entities in such chain.

"***Termination***" or "***Terminated***" means, for purposes of this Plan with respect to a Participant, that the Participant has for any reason ceased to provide services as an employee, officer, director or consultant to the Company or a Parent or Subsidiary of the Company. A Participant will not be deemed to have ceased to provide services while the Participant is on a bona fide leave of absence, if such leave was approved by the Company in writing. In the case of an approved leave of absence, the Committee may make such provisions respecting crediting of service, including suspension of vesting of the Award (including pursuant to a formal policy adopted from time to time by the Company) it may deem appropriate, except that in no event

may an Option be exercised after the expiration of the term set forth in the Stock Option Agreement. The Committee will have sole discretion to determine whether a Participant has ceased to provide services and the effective date on which the Participant ceased to provide services (the "***Termination Date***").

"***Unvested Shares***" means "***Unvested Shares***" as defined in the Award Agreement for an Award.

"***Vested Shares***" means "***Vested Shares***" as defined in the Award Agreement.

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STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

RESTRICTED STOCK PURCHASE AGREEMENT

This Restricted Stock Purchase Agreement (the "***Agreement***") is made and entered into as of _____ (the "***Effective Date***") by and between Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), and **_____** ("***Purchaser***"). Capitalized terms not defined herein shall have the meanings ascribed to them in the Company's 2014 Equity Incentive Plan, as may be amended from time to time (the "***Plan***").

1. PURCHASE OF SHARES.

1.1 Agreement to Purchase and Sell Shares. On the Effective Date and subject to the terms and conditions of this Agreement and the Plan, Purchaser hereby purchases from the Company, and the Company hereby sells to Purchaser, **_____ (_____)** shares of the Company's Common Stock (the "***Shares***"), at the price of **_____($____)** per share (the "***Purchase Price Per Share***") for a Total Purchase Price of **_____($_____)** (the "***Purchase Price***"). As used in this Agreement, the term "***Shares***" includes the Shares purchased under this Agreement and all securities received (a) in replacement of the Shares, (b) as a result of stock dividends or stock splits with respect to the Shares, and (c) in replacement of the Shares in a merger, recapitalization, reorganization or similar corporate transaction.

1.2 Payment. Purchaser hereby delivers payment of the Purchase Price as follows (check and complete as appropriate):

☐ in cash (by check) in the amount of $_____, receipt of which is acknowledged by the Company.

☐ by cancellation of indebtedness of the Company owed to Purchaser in the amount of $_____.

☐ by the waiver hereby of compensation due or accrued for services rendered in the amount of $_____.

☐ by delivery of _____ fully-paid, nonassessable and vested shares of the Common Stock of the Company owned by Purchaser free and clear of all liens, claims, encumbrances or security interests, valued at the current Fair Market Value of $_____ per share (a) for which the Company has received "full payment of the purchase price" within the meaning of SEC Rule 144, (if purchased by use of a promissory note, such note has been fully paid with respect to such vested shares), or (b) that were obtained by Purchaser in the open public market.

2. DELIVERIES.

2.1 Deliveries by the Purchaser. Purchaser hereby delivers to the Company at its principal executive offices: (a) this completed and signed Agreement, and (b) the Purchase Price, paid by delivery of the form of payment specified in Section 1.2.

2.2 Deliveries by the Company. Upon its receipt of the Purchase Price, payment or other provision for any applicable tax obligations, if any, and all the documents to be executed and delivered by Purchaser to the Company as provided herein, the Company will issue a duly executed stock certificate evidencing the Shares in the name of Purchaser with the appropriate legends affixed thereto, to

be placed in escrow as provided in Section 7.2 to secure performance of Purchaser's obligations under Sections 5 and 6 until expiration or termination of the Company's Repurchase Option and Refusal Right (as such terms are defined in Sections 5 and 6, respectively).

3. REPRESENTATIONS AND WARRANTIES OF PURCHASER. Purchaser represents and warrants to the Company as follows.

3.1 Agrees to Terms of the Plan. Purchaser has received a copy of the Plan, has read and understands the terms of the Plan and this Agreement, and agrees to be bound by their terms and conditions.

3.2 Acknowledgment of Tax Risks. Purchaser acknowledges that there may be adverse tax consequences upon the purchase and the disposition of the Shares, and that Purchaser has been advised by the Company to consult a tax adviser prior to such purchase or disposition. Purchaser further acknowledges that Purchaser is not relying on the Company or its counsel for tax advice regarding Purchaser's purchaser or disposition of the Shares or the tax consequences to Purchaser of this Agreement.

3.3 Shares Not Registered or Qualified. Purchaser understands and acknowledges that the Shares have not been registered with the SEC under the Securities Act, or with any securities regulatory agency administering any state securities laws, and that, notwithstanding any other provision of this Agreement to the contrary, the purchase of any Shares is expressly conditioned upon compliance with the Securities Act and all applicable state securities laws. Purchaser agrees to cooperate with the Company to ensure compliance with such laws.

3.4 No Transfer Unless Registered or Exempt; Contractual Restrictions on Transfers. Purchaser understands that Purchaser may not transfer any Shares unless such Shares are registered under the Securities Act or qualified under applicable state securities laws or unless, in the opinion of counsel to the Company, exemptions from such registration and qualification requirements are available. Purchaser understands that only the Company may file a registration statement with the SEC and that the Company is under no obligation to do so with respect to the Shares. Purchaser has also been advised that exemptions from registration and qualification may not be available or may not permit Purchaser to transfer all or any of the Shares in the amounts or at the times proposed by Purchaser. Purchaser further acknowledges that this Agreement imposes additional restrictions on transfer of the Shares.

3.5 SEC Rule 701. Shares that are issued pursuant to SEC Rule 701 promulgated under the Securities Act may become freely tradable by non-affiliates (under limited conditions regarding the method of sale) ninety (90) days after the first sale of Common Stock of the Company to the general public pursuant to a registration statement filed with and declared effective by the SEC, subject to the lengthier market standoff agreement contained in Section 4 of this Agreement or any other agreement entered into by Purchaser. Affiliates must comply with the provisions (other than the holding period requirements) of Rule 144 which permits certain limited sales of unregistered securities. Rule 144 is not presently available with respect to the Shares and, in any event, requires that the Shares be held for a minimum of six (6) months, and in certain cases one (1) year, after they have been purchased and paid for (within the meaning of Rule 144). Purchaser understands that use of a promissory note as payment for the Shares may not be deemed to be "full payment of the purchase price" within the meaning of Rule 144 unless certain conditions are met and that, accordingly, the Rule 144 holding period of such Shares may not begin to run until such Shares are fully paid for within the meaning of Rule 144. Purchaser understands that Rule 144 may indefinitely restrict transfer of the Shares so long as Purchaser remains an "affiliate" of the Company or if "current public information" about the Company (as defined in Rule 144) is not publicly available.

3.6 Access to Information. Purchaser has had access to all information regarding the Company and its present and prospective business, assets, liabilities and financial condition that Purchaser reasonably considers important in making the decision to purchase the Shares, and Purchaser has had ample opportunity to ask questions of the Company's representatives concerning such matters and this investment.

3.7 Understanding of Risks. Purchaser is fully aware of: (a) the highly speculative nature of the investment in the Shares; (b) the financial hazards involved; (c) the lack of liquidity of the Shares and the restrictions on transferability of the Shares (e.g., that Purchaser may not be able to sell or dispose of the Shares or use them as collateral for loans); (d) the qualifications and backgrounds of the management of the Company; and (e) the tax consequences of investment in, and disposition of, the Shares.

3.8 Purchase for Own Account for Investment. Purchaser is purchasing the Shares for Purchaser's own account for investment purposes only and not with a view to, or for sale in connection with, a distribution of the Shares within the meaning of the Securities Act. Purchaser has no present intention of selling or otherwise disposing of all or any portion of the Shares and no one other than Purchaser has any beneficial ownership of any of the Shares.

3.9 No General Solicitation. At no time was Purchaser presented with or solicited by any publicly issued or circulated newspaper, mail, radio, television or other form of general advertising or solicitation in connection with the offer, sale and purchase of the Shares.

3.10 SEC Rule 144. Purchaser has been advised that SEC Rule 144 promulgated under the Securities Act, which permits certain limited sales of unregistered securities, is not presently available with respect to the Shares and, in any event, requires that the Shares be held for a minimum of six (6) months, and in certain cases one (1) year, after they have been purchased and paid for (within the meaning of Rule 144), subject to the lengthier market standoff agreement contained in Section 4 of this Agreement or any other agreement entered into by Purchaser. Purchaser understands that Rule 144 may indefinitely restrict transfer of the Shares so long as Purchaser remains an "affiliate" of the Company or if "current public information" about the Company (as defined in Rule 144) is not publicly available.

4. MARKET STANDOFF AGREEMENT. Subject to the provisions of this Section, Purchaser agrees in connection with any registration of the Company's securities under the Securities Act or other registered public offering that, upon the request of the Company or the underwriters managing any registered public offering of the Company's securities, Purchaser will not sell or otherwise dispose of any Shares without the prior written consent of the Company or such managing underwriters, as the case may be, for a period of time (not to exceed one hundred eighty (180) days) after the effective date of such registration requested by such managing underwriters and subject to all restrictions as the Company or the managing underwriters may specify for employee-stockholders generally. The restricted period shall in any event terminate two (2) years after the closing date of the Company's initial public offering. For purposes of this Section 4, the term "Company" shall include any wholly-owned subsidiary of the Company into which the Company merges or consolidates. In order to enforce the foregoing covenant, the Company shall have the right to place restrictive legends on the certificates representing the shares subject to this Section and to impose stop transfer instructions with respect to the Shares until the end of such period. Purchaser further agrees that the underwriters of any such registered public offering shall be third party beneficiaries of this Section 4 and agrees to enter into any agreement reasonably required by the underwriters to implement the foregoing. Notwithstanding anything in this Section to the contrary, for the avoidance of doubt, the foregoing provisions of this Section shall not apply to any registration of securities of the Company (a) under an employee benefit plan or (b) in a merger, consolidation, business combination or similar transaction.

5. COMPANY'S REPURCHASE OPTION FOR UNVESTED SHARES. The Company, or (subject to Section 5.6) its assignee, shall have the option to repurchase all or a portion of the Purchaser's Shares that are Unvested Shares (as defined below) on the Termination Date on the terms and conditions set forth in this Section (the "***Repurchase Option***") if Purchaser is Terminated (as defined in the Plan) for any reason, or no reason, including without limitation, Purchaser's death, Disability (as defined in the Plan), voluntary resignation or termination by the Company with or without Cause.

5.1 Termination and Termination Date. In case of any dispute as to whether Purchaser is Terminated, the Committee shall have discretion to determine in good faith whether Purchaser has been Terminated and the effective date of such Termination (the "***Termination Date***").

5.2 Vested and Unvested Shares. Shares that are vested pursuant to the schedule set forth in this Section 5.2 are "***Vested Shares***." Shares that are not vested pursuant to such schedule are "***Unvested Shares***." On the Effective Date, _____ of the Shares will be Unvested Shares (the "***Initial Unvested Shares***"). Provided Purchaser continues to provide services to the Company or any Subsidiary or Parent of the Company at all times from the Effective Date until _____ (the "***First Vesting Date***"), then on the First Vesting Date one-fourth (1/4th) of the Initial Unvested Shares will become Vested Shares, and on the same day of each succeeding calendar month thereafter (or if there is no such day in any month, then the last day of such calendar month), an additional one forty-eighth 1/48th of the Initial Unvested Shares shall vest until the earliest to occur of (a) the date all of the Shares are Vested Shares, (b) the Termination Date or (c) the date vesting otherwise terminates pursuant to this Agreement or the Plan. No fractional Shares shall be issued. No Shares will become Vested Shares after the Termination Date. The number of the Shares that are Vested Shares or Unvested Shares will be proportionally adjusted to reflect any stock split, reverse stock split or similar change in the capital structure of the Company as set forth in Section 2.2 of the Plan occurring after the Effective Date.

5.3 Exercise of Repurchase Option. At any time within ninety (90) days after the Purchaser's Termination Date, the Company, or its assignee, may, at its option, elect to repurchase any or all the Purchaser's Shares that are Unvested Shares on the Termination Date by giving Purchaser written notice of exercise of the Repurchase Option, specifying the number of Unvested Shares to be repurchased. Such Unvested Shares shall be repurchased at the Purchase Price Per Share, proportionately adjusted for any stock split, reverse stock split or similar change in the capital structure of the Company as set forth in Section 2.2 of the Plan occurring after the Effective Date (the "***Repurchase Price***"). The Repurchase Price shall be payable, at the option of the Company or its assignee, by check or by cancellation of all or a portion of any outstanding indebtedness owed by Purchaser to the Company and/or such assignee, or by any combination thereof. The Repurchase Price shall be paid without interest within the term of the Repurchase Option as described in the first sentence of this Section 5.3. The Company may, at its option, decline to exercise its Repurchase Option or may exercise its Repurchase Option only with respect to a portion of the Unvested Shares.

5.4 Right of Termination Unaffected. Nothing in this Agreement shall be construed to limit or otherwise affect in any manner whatsoever the right or power of the Company (or any Parent or Subsidiary of the Company) to terminate Purchaser's employment or other relationship with Company (or the Parent or Subsidiary of the Company) at any time, for any reason or no reason, with or without Cause.

5.5 Additional or Exchanged Securities and Property. Subject to the provisions of Section 5.2 above, in the event of a merger or consolidation of the Company with or into another entity, any other corporate reorganization, a stock split, the declaration of a stock dividend, the declaration of an extraordinary dividend payable in a form other than stock, a spin-off, a recapitalization or a similar transaction affecting the Company's outstanding securities, any securities or other property (including cash or cash equivalents) that are by reason of such transaction exchanged for, or distributed or

issued with respect to, any Unvested Shares shall immediately be subject to the Repurchase Option. Appropriate adjustments shall be made to the price per share to be paid for Unvested Shares upon the exercise of the Repurchase Option (by allocating such price among the Unvested Shares and such other securities or property), *provided* that the aggregate purchase price payable for the Unvested Shares and all such other securities and property shall remain the same price that was original payable under the Repurchase Option to repurchase such Unvested Shares. Subject to the provisions of Section 5.2 above, in the event of a merger or consolidation of the Company with or into another entity or any other corporate reorganization, the Repurchase Option may be exercised by the Company's successor.

5.6 Assignment of Repurchase Right. The Company may freely assign the Company's Repurchase Option, in whole or in part, provided that any person who accepts an assignment of the Repurchase Option from the Company shall assume all of the Company's rights and obligations with respect to the Repurchase Option (to the extent so assigned) under this Agreement.

6. COMPANY'S REFUSAL RIGHT. Unvested Shares shall be subject to the restrictions on transfer and the granting of encumbrances thereon as provided in Section 7 hereof. Before any Vested Shares (as defined in Section 5 hereof) held by Purchaser or any transferee of such Vested Shares (either sometimes referred to herein as the "***Holder***") may be sold or otherwise transferred (including, without limitation, a transfer by gift or operation of law), the Company and/or its assignee(s) will have a right of first refusal to purchase the Vested Shares to be sold or transferred (the "***Offered Shares***") on the terms and conditions set forth in this Section (the "***Refusal Right***").

6.1 Notice of Proposed Transfer. The Holder of the Offered Shares will deliver to the Company a written notice (the "***Notice***") stating: (a) the Holder's bona fide intention to sell or otherwise transfer the Offered Shares; (b) the name and address of each proposed purchaser or other transferee of Offered Shares ("***Proposed Transferee***"); (c) the number of Offered Shares to be transferred to each Proposed Transferee; (d) the bona fide cash price or other consideration for which the Holder proposes to transfer the Offered Shares to each Proposed Transferee (the "***Offered Price***"); and (e) that the Holder acknowledges this Notice is an offer to sell the Offered Shares to the Company and/or its assignee(s) pursuant to the Company's Refusal Right at the Offered Price as provided for in this Agreement.

6.2 Exercise of Refusal Right. At any time within thirty (30) days after the date the Notice is effective pursuant to Section 9.2, the Company and/or its assignee(s) may, by giving written notice to the Holder, elect to purchase all (or, with the consent of the Holder, less than all) the Offered Shares proposed to be transferred to any one or more of the Proposed Transferees named in the Notice, at the purchase price, determined as provided in Section 6.3 below.

6.3 Purchase Price. The purchase price for the Offered Shares purchased under this Section will be the Offered Price, *provided* that if the Offered Price consists of no legal consideration (as, for example, in the case of a transfer by gift), then the purchase price will be the fair market value of the Offered Shares as determined in good faith by the Company's Board of Directors. If the Offered Price includes consideration other than cash, then the value of the non-cash consideration, as determined in good faith by the Company's Board of Directors, will conclusively be deemed to be the cash equivalent value of such non-cash consideration.

6.4 Payment. The purchase price for the Offered Shares will be paid, at the option of the Company and/or its assignee(s) (as applicable), by check or by cancellation of all or a portion of any outstanding indebtedness owed by the Holder to the Company (or to such assignee, in the case of a purchase of Offered Shares by such assignee) or by any combination thereof. The purchase price will be paid without interest within sixty (60) days after the Company's receipt of the Notice, or, at the option of the Company and/or its assignee(s), in the manner and at the time(s) set forth in the Notice.

6.5 Holder's Right to Transfer. If all of the Offered Shares proposed in the Notice to be transferred to a given Proposed Transferee are not purchased by the Company and/or its assignee(s) as provided in this Section, then the Holder may sell or otherwise transfer such Offered Shares to such Proposed Transferee at the Offered Price or at a higher price, *provided* that (a) such sale or other transfer is consummated within one hundred twenty (120) days after the date the Notice is effective pursuant to Section 9.2, (b) any such sale or other transfer is effected in compliance with all applicable securities laws, and (c) such Proposed Transferee agrees in writing that the provisions of this Section will continue to apply to the Offered Shares in the hands of such Proposed Transferee. If the Offered Shares described in the Notice are not transferred to such Proposed Transferee within such one hundred twenty (120) day period, then a new Notice must be given to the Company pursuant to which the Company will again be offered the Refusal Right before any Shares held by the Holder may be sold or otherwise transferred.

6.6 Exempt Transfers. Notwithstanding the foregoing, the following transfers of Vested Shares will be exempt from the Refusal Right: (a) the transfer of any or all of the Vested Shares during Purchaser's lifetime by gift or on Purchaser's death by will or intestacy to Purchaser's "Immediate Family" (as defined below) or to a trust for the benefit of Purchaser or Purchaser's Immediate Family, *provided* that each transferee agrees in a writing satisfactory to the Company that the provisions of this Section will continue to apply to the transferred Vested Shares in the hands of such transferee; (b) any transfer of Vested Shares made pursuant to a statutory merger or statutory consolidation of the Company with or into another entity or entities (except that, subject to Section 6.7, unless the agreement of merger or consolidation expressly otherwise provides, the Refusal Right will continue to apply thereafter to such Vested Shares, in which case the surviving entity of such merger or consolidation shall succeed to the rights of the Company under this Section); or (c) any transfer of Vested Shares pursuant to the winding up and dissolution of the Company. As used herein, the term "***Immediate Family***" will mean Purchaser's spouse, the lineal descendant or antecedent, father, mother, brother or sister, child, adopted child, grandchild or adopted grandchild of Purchaser or Purchaser's spouse, or the spouse of any of the above or Spousal Equivalent, as defined herein. As used herein, a person is deemed to be a "***Spousal Equivalent***" provided the following circumstances are true: (i) irrespective of whether or not the Purchaser and the Spousal Equivalent are the same sex, they are the sole spousal equivalent of the other for the last twelve (12) months, (ii) they intend to remain so indefinitely, (iii) neither are married to anyone else, (iv) both are at least 18 years of age and mentally competent to consent to contract, (v) they are not related by blood to a degree of closeness that which would prohibit legal marriage in the state in which they legally reside, (vi) they are jointly responsible for each other's common welfare and financial obligations, and (vii) they reside together in the same residence for the last twelve (12) months and intend to do so indefinitely.

6.7 Termination of Refusal Right. The Refusal Right will terminate as to all Shares: (a) on the effective date of the first sale of Common Stock of the Company to the public pursuant to a registration statement filed with and declared effective by the SEC under the Securities Act or, if expressly approved by the Board as terminating the Refusal Right, under the laws of any other country having substantially the same effect (other than a registration statement relating solely to the issuance of Common Stock pursuant to a business combination or an employee incentive or benefit plan) or (b) on any transfer or conversion of Shares made pursuant to a statutory merger or statutory consolidation of the Company with or into another entity or entities if the common stock of the surviving entity or any direct or indirect parent entity thereof is registered under the Securities Exchange Act of 1934, as amended.

7. ADDITIONAL RESTRICTIONS UPON SHARE OWNERSHIP OR TRANSFER.

7.1 Rights as a Stockholder. Subject to the terms and conditions of this Agreement, Purchaser will have all of the rights of a Stockholder of the Company with respect to the Shares from and after the date that Shares are issued to Purchaser until such time as Purchaser disposes of the Shares or the Company and/or its assignee(s) exercise(s) the Refusal Right or the Repurchase Option. Upon an exercise of the Refusal Right or the Repurchase Option, Purchaser will have no further rights as a holder

of the Shares so purchased upon such exercise, other than the right to receive payment for the Shares so purchased in accordance with the provisions of this Agreement, and Purchaser will promptly surrender the stock certificate(s) evidencing the Shares so purchased to the Company for transfer or cancellation.

7.2 Escrow. As security for Purchaser's faithful performance of this Agreement, Purchaser agrees, immediately upon receipt of the stock certificate(s) evidencing the Shares, to deliver such certificate(s) to the Secretary of the Company or other designee of the Company (the "***Escrow Holder***"), who is hereby appointed to hold such certificate(s) in escrow and to take all such actions and to effectuate all such transfers and/or releases of such Shares as are in accordance with the terms of this Agreement. Purchaser and the Company agree that Escrow Holder will not be liable to any party to this Agreement (or to any other person or entity) for any actions or omissions unless Escrow Holder is grossly negligent or intentionally fraudulent in carrying out the duties of Escrow Holder under this Agreement. Escrow Holder may rely upon any letter, notice or other document executed with any signature purported to be genuine and may rely on the advice of counsel and obey any order of any court with respect to the transactions contemplated by this Agreement. The Shares will be released from escrow upon termination of both the Refusal Right and the Repurchase Option.

7.3 Encumbrances on Shares. Without the Company's prior written consent given with the approval of the Company's Board of Directors, Purchaser may not grant a lien or security interest in, or pledge, hypothecate or encumber, any Unvested Shares.

7.4 Restrictions on Transfers. Unvested Shares may not be sold or otherwise transferred by Purchaser without the Company's prior written consent. Purchaser hereby agrees that Purchaser shall make no disposition of the Shares (other than as permitted by this Agreement) unless and until:

(a) Purchaser shall have notified the Company of the proposed disposition and provided a written summary of the terms and conditions of the proposed disposition;

(b) Purchaser shall have complied with all requirements of this Agreement applicable to the disposition of the Shares, including but not limited to the Refusal Right, the Market Standoff and the Repurchase Option; and

(c) Purchaser shall have provided the Company with written assurances, in form and substance satisfactory to counsel for the Company, that (i) the proposed disposition does not require registration of the Shares under the Securities Act or under any state securities laws, and (ii) all appropriate actions necessary for compliance with the registration and qualification requirements of the Securities Act and any state securities laws, or of any exemption from registration or qualification, available thereunder (including Rule 144) have been taken.

Each person (other than the Company) to whom the Shares are transferred by means of one of the permitted transfers specified in this Agreement must, as a condition precedent to the validity of such transfer, acknowledge in writing to the Company that such person is bound by the provisions of this Agreement and that the transferred Shares are subject to the Company's Refusal Right or the Repurchase Option granted hereunder and the market stand-off provisions of Section 4 hereof, to the same extent such Shares would be so subject if retained by the Purchaser.

7.5 Restrictive Legends and Stop-transfer Orders. Purchaser understands and agrees that the Company will place the legends set forth below or similar legends on any stock certificate(s) evidencing the Shares, together with any other legends that may be required by applicable laws, the Company's Certificate of Incorporation or Bylaws, any other agreement between Purchaser and the Company or any agreement between Purchaser and any third party:

THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER THE SECURITIES LAWS OF CERTAIN STATES. THESE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE AND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS, PURSUANT TO REGISTRATION OR EXEMPTION THEREFROM. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF THIS INVESTMENT FOR AN INDEFINITE PERIOD OF TIME. THE ISSUER OF THESE SECURITIES MAY REQUIRE AN OPINION OF COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER TO THE EFFECT THAT ANY PROPOSED TRANSFER OR RESALE IS IN COMPLIANCE WITH THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO CERTAIN RESTRICTIONS ON PUBLIC RESALE AND TRANSFER, INCLUDING THE RIGHT OF FIRST REFUSAL AND THE REPURCHASE OPTION HELD BY THE ISSUER AND/OR ITS ASSIGNEE(S), AND A MARKET STANDOFF AGREEMENT, AS SET FORTH IN A RESTRICTED STOCK PURCHASE AGREEMENT BETWEEN THE ISSUER AND THE ORIGINAL HOLDER OF THESE SHARES, A COPY OF WHICH MAY BE OBTAINED AT THE PRINCIPAL OFFICE OF THE ISSUER. SUCH PUBLIC SALE AND TRANSFER RESTRICTIONS INCLUDING THE RIGHT OF FIRST REFUSAL, THE REPURCHASE OPTION AND THE MARKET STANDOFF ARE BINDING ON TRANSFEREES OF THESE SHARES.

Purchaser also agrees that, to ensure compliance with the restrictions imposed by this Agreement, the Company may issue appropriate "stop-transfer" instructions to its transfer agent, if any, and if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records. The Company will not be required (a) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (b) to treat as owner of such Shares, or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares have been so transferred.

8. TAX CONSEQUENCES. *PURCHASER UNDERSTANDS THAT PURCHASER MAY SUFFER ADVERSE TAX CONSEQUENCES AS A RESULT OF PURCHASER'S PURCHASE OR DISPOSITION OF THE SHARES. PURCHASER REPRESENTS (a) THAT PURCHASER HAS CONSULTED WITH ANY TAX ADVISER THAT PURCHASER DEEMS ADVISABLE IN CONNECTION WITH THE PURCHASE OR DISPOSITION OF THE SHARES AND (b) THAT PURCHASER IS NOT RELYING ON THE COMPANY FOR ANY TAX ADVICE.* Purchaser hereby acknowledges that Purchaser has been informed that, with respect to Unvested Shares, unless an election is filed by Purchaser with the Internal Revenue Service (and, if necessary, the proper state taxing authorities) **within 30 days after the purchase** of the Shares electing, pursuant to Section 83(b) of the Internal Revenue Code (and similar state tax provisions, if applicable), to be taxed currently on any difference between the Purchase Price of the Unvested Shares and their Fair Market Value on the date of purchase, there will be a recognition of taxable income to Purchaser, measured by the excess, if any, of the Fair Market Value of the Unvested Shares, at the time they cease to be Unvested Shares, over the Purchase Price for such Shares. Purchaser

represents that Purchaser has consulted any tax advisers Purchaser deems advisable in connection with Purchaser's purchase of the Shares and the filing of the election under Section 83(b) and similar tax provisions. A form of Election under Section 83(b) is attached hereto as **Exhibit 1** for reference. *BY PROVIDING THE FORM OF ELECTION, NEITHER THE COMPANY NOR ITS LEGAL COUNSEL IS THEREBY UNDERTAKING TO FILE THE ELECTION FOR PURCHASER, WHICH OBLIGATION TO FILE SHALL REMAIN SOLELY WITH PURCHASER.*

9. GENERAL PROVISIONS.

9.1 Successors and Assigns. The Company may assign any of its rights under this Agreement, including its rights to purchase Shares under the Refusal Right or the Repurchase Option. Neither Purchaser, nor any of Purchaser's successors and assigns, may assign, whether voluntarily or by operation of law, any of its rights and obligations under this Agreement, except with the prior written consent of the Company. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth, this Agreement will be binding upon Purchaser and Purchaser's heirs, executors, administrators, legal representatives, successors and assigns.

9.2 Notices. Any and all notices required or permitted to be given to a party pursuant to the provisions of this Agreement will be in writing and will be effective and deemed to provide such party sufficient notice under this Agreement on the earliest of the following: (i) at the time of personal delivery, if delivery is in person; (ii) at the time an electronic confirmation of receipt is received, if delivery is by email; (iii) at the time of transmission by facsimile, addressed to the other party at its facsimile number specified herein (or hereafter modified by subsequent notice to the parties hereto), with confirmation of receipt made by both telephone and printed confirmation sheet verifying successful transmission of the facsimile; (iv) one (1) business day after deposit with an express overnight courier for United States deliveries, or two (2) business days after such deposit for deliveries outside of the United States, with proof of delivery from the courier requested; or (v) three (3) business days after deposit in the United States mail by certified mail (return receipt requested) for United States deliveries. Any notice for delivery outside the United States will be sent by email, facsimile or by express courier. Any notice not delivered personally or by email will be sent with postage and/or other charges prepaid and properly addressed to Purchaser at the last known address or facsimile number on the books of the Company, or at such other address or facsimile number as such other party may designate by one of the indicated means of notice herein to the other parties hereto or, in the case of the Company, to it at its principal place of business. Notices to the Company will be marked "Attention: Chief Financial Officer." Notices by facsimile shall be machine verified as received.

9.3 Further Assurances. The parties agree to execute such further documents and instruments and to take such further actions as may be reasonably necessary to carry out the purposes and intent of this Agreement.

9.4 Entire Agreement. The Plan is incorporated herein by reference. The Plan and this Agreement, together with all Exhibits hereto, constitute the entire agreement and understanding of the parties with respect to the subject matter of this Agreement, and supersede all prior understandings and agreements, between the parties hereto with respect to the specific subject matter hereof.

9.5 Severability. If any provision of this Agreement is determined by any court or arbitrator of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such provision will be enforced to the maximum extent possible given the intent of the parties hereto. If such clause or provision cannot be so enforced, such provision shall be stricken from this Agreement and the remainder of this Agreement shall be enforced as if such invalid, illegal or unenforceable clause or provision had (to the extent not enforceable) never been contained in this Agreement. Notwithstanding the forgoing, if the

value of this Agreement based upon the substantial benefit of the bargain for any party is materially impaired, which determination as made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

9.6 Execution. This Agreement may be entered into in two or more counterparts, each of which shall be deemed an original and all of which shall constitute one and the same agreement. This Agreement may be executed and delivered by facsimile and, upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

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[Signature page follows]

IN WITNESS WHEREOF, the Company has caused this Restricted Stock Purchase Agreement to be executed by its duly authorized representative, and Purchaser has executed this Restricted Stock Purchase Agreement, as of the date first set forth above.

STOKE THERAPEUTICS, INC.

By: _____

Address:
Fax No.: (____) _____

PURCHASER

_____

Address: _____
_____
Fax No.: (____) _____

Exhibit

Exhibit 1: Form of Election Pursuant to Section 83(b)

EXHIBIT 1

FORM OF SECTION 83(B) ELECTION

ELECTION UNDER SECTION 83(b) OF THE INTERNAL REVENUE CODE

The undersigned Taxpayer hereby elects, pursuant to Section 83(b) of the Internal Revenue Code of 1986, as amended, to include in gross income for the Taxpayer's current taxable year the excess, if any, of the fair market value of the property described below at the time of transfer over the amount paid for such property, as compensation for services.

1. TAXPAYER'S NAME: _____

   TAXPAYER'S ADDRESS: _____

   _____

   SOCIAL SECURITY NUMBER: _____

   TAXABLE YEAR: Calendar Year _____

2. The property with respect to which the election is made is described as follows: _____ shares of Common Stock, par value $0.0001 per share, of Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), which is Taxpayer's employer or the corporation for whom the Taxpayer performs services.

3. The date on which the shares were transferred was _____, _____.

4. The shares are subject to the following restrictions: The Company may repurchase all or a portion of the shares at the Taxpayer's original purchase price under certain conditions at the time of Taxpayer's termination of employment or services.

5. The fair market value of the shares at the time of transfer (without regard to restrictions other than a nonlapse restriction as defined in § 1.83-3(h) of the Income Tax Regulations) was $____ per share x _____ shares = $_____.

6. The amount paid for such shares was $____ per share x _____ shares = $_____.

7. The amount to include in the Taxpayer's gross income for the Taxpayer's current taxable year is $_____.

*THIS ELECTION MUST BE FILED WITH THE INTERNAL REVENUE SERVICE ("**IRS**"), AT THE OFFICE WHERE THE TAXPAYER FILES ANNUAL INCOME TAX RETURNS, WITHIN 30 DAYS AFTER THE DATE OF TRANSFER OF THE PROPERTY, AND MUST ALSO BE FILED WITH THE TAXPAYER'S INCOME TAX RETURNS FOR THE CALENDAR YEAR. A COPY OF THE ELECTION HAS ALSO BEEN FURNISHED TO THE COMPANY. THE ELECTION CANNOT BE REVOKED WITHOUT THE CONSENT OF THE IRS.*

Dated: _____ _____

Taxpayer's Signature

EARLY EXERCISE FORM

OPTION GRANT NO. ___

NOTICE OF STOCK OPTION GRANT

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

The Optionee named below ("***Optionee***") has been granted an option (this "***Option***") to purchase shares of Common Stock, $0.0001 par value per share (the "***Common Stock***"), of Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), pursuant to the Company's 2014 Equity Incentive Plan, as amended from time to time (the "***Plan***") on the terms, and subject to the conditions, described below and in the Stock Option Agreement attached hereto as **Exhibit A**, including its annexes (the "***Stock Option Agreement***").

Optionee:	
Maximum Number of Shares Subject to this Option (the "*Shares*"):	
Exercise Price Per Share:	$____ per share
Date of Grant:	
Vesting Start Date:	
Exercise Schedule:	This Option is immediately exercisable for all of the Shares, subject to the terms of the Stock Option Agreement
Expiration Date:	The date ten (10) years after the Date of Grant set forth above, subject to earlier expiration in the event of Termination as provided in Section 3 of the Stock Option Agreement.
Tax Status of Option: (Check *Only* One Box):	☐ Incentive Stock Option (*To the fullest extent permitted by the Code*) ☐ Nonqualified Stock Option. (*If neither box is checked, this Option is a Nonqualified Stock Option*).

Vesting Schedule [EXAMPLE ONLY]: For so long as Optionee continuously provides services to the Company (or any Subsidiary or Parent of the Company) as an employee, officer, director, contractor or consultant, the Shares subject to this Option will vest as follows: (a) prior to the first one (1) year anniversary of the Vesting Start Date, none of the Shares will be vested; (b) [**1/4th]** of the Shares will be vested on the one (1) year anniversary of the Vesting Start Date; and (c) thereafter, this Option will become vested and exercisable with respect to an additional [**1/48th**] of the Shares when Optionee completes each month of continuous service following the first one (1) year anniversary of the Vesting Start Date.

General; Agreement: By their signatures below, Optionee and the Company agree that this Option is granted under and governed by this Notice of Stock Option Grant (this "***Grant Notice***") and by the provisions of the Plan and the Stock Option Agreement. The Plan and the Stock Option Agreement are incorporated herein by reference. Capitalized terms used but not defined herein shall have the meanings given to them in the Plan or in the Stock Option Agreement, as applicable. By signing below, Optionee acknowledges receipt of a copy of this Grant Notice, the Plan and the Stock Option Agreement, represents that Optionee has carefully read and is familiar with their provisions, and hereby accepts the Option subject to all of their respective terms and conditions. Optionee acknowledges that there may be adverse tax consequences upon exercise of the Option or disposition of the Shares and that Optionee should consult a tax adviser prior to such exercise or disposition.

Execution and Delivery: This Grant Notice may be executed and delivered electronically whether via the Company's intranet or the Internet site of a third party or via email or any other means of electronic delivery specified by the Company. By Optionee's acceptance hereof (whether written, electronic or otherwise), Optionee agrees, to the fullest extent permitted by law, that in lieu of receiving documents in paper format, Optionee accepts the electronic delivery of any documents that the Company (or any third party the Company may designate), may deliver in connection with this grant (including the Plan, this Grant Notice, the Stock Option Agreement, the information described in Rules 701(e)(2), (3), (4) and (5) under the Securities Act (the "***701 Disclosures***"), account statements, or other communications or information) whether via the Company's intranet or the Internet site of such third party or via email or such other means of electronic delivery specified by the Company.

STOKE THERAPEUTICS, INC.

By /Signature: _____

Typed Name: _____

Title: _____

Optionee Signature: _____

Optionee's Name:

ATTACHMENT: Exhibit A – Stock Option Agreement

Exhibit A

Stock Option Agreement

EXHIBIT A
EARLY EXERCISE FORM

STOCK OPTION AGREEMENT

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

This Stock Option Agreement (this "***Agreement***") is made and entered into as of the date of grant (the "***Date of Grant***") set forth on the Notice of Stock Option Grant attached as the facing page to this Agreement (the "***Grant Notice***") by and between Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), and the optionee named on the Grant Notice ("***Optionee***"). Capitalized terms not defined in this Agreement shall have the meaning ascribed to them in the Company's 2014 Equity Incentive Plan, as amended from time to time (the "***Plan***"), or in the Grant Notice, as applicable.

1. GRANT OF OPTION. The Company hereby grants to Optionee an option (this "***Option***") to purchase up to the total number of shares of Common Stock of the Company, $0.0001 par value per share (the "***Common Stock***"), set forth in the Grant Notice as the Shares (the "***Shares***") at the Exercise Price Per Share set forth in the Grant Notice (the "***Exercise Price***"), subject to all of the terms and conditions of the Grant Notice, this Agreement and the Plan. If designated as an Incentive Stock Option in the Grant Notice, this Option is intended to qualify as an incentive stock option (the "***ISO***") within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended (the "***Code***"), except that if on the Date of Grant Optionee is not subject to U.S. income tax, then this Option shall be a NQSO.

2. EXERCISE PERIOD.

2.1. Exercise Period of Option. Subject to the conditions set forth in this Agreement, all or part of this Option may be exercised at any time after the Date of Grant. Shares purchased by exercising this Option may be subject to the Repurchase Option as set forth in Section 7 below. This Option will become vested during its term as to portions of the Shares in accordance with the Vesting Schedule set forth in the Grant Notice. Notwithstanding any provision in the Plan or this Agreement to the contrary, on or after Optionee's Termination Date, this Option may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date.

2.2. Vesting of Option Shares. Shares with respect to which this Option is vested at a given time pursuant to the Vesting Schedule set forth in the Grant Notice are "***Vested Shares***." Shares with respect to which this Option is not vested at a given time pursuant to the Vesting Schedule set forth in the Grant Notice are "***Unvested Shares***."

2.3. Expiration. The Option shall expire on the Expiration Date set forth in the Grant Notice or earlier as provided in Section **Error! Reference source not found.** below.

3. TERMINATION.

3.1. Termination for Any Reason Except Death, Disability or Cause. Except as provided in subsection 3.2 in a case in which Optionee dies within three (3) months after Optionee is Terminated other than for Cause, if Optionee is Terminated for any reason (other than Optionee's death or Disability or for Cause), then (a) on and after Optionee's Termination Date, this Option shall expire immediately with respect to any Shares that are Unvested Shares and may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date and (b) this Option to the extent (and only to the extent) that it is exercisable with respect to Vested Shares on Optionee's Termination Date, may be exercised by Optionee no later than three (3) months after Optionee's Termination Date (but in no event may this Option be exercised after the Expiration Date).

3.2. Termination Because of Death or Disability. If Optionee is Terminated because of Optionee's death or Disability (or if Optionee dies within three (3) months of the date of Optionee's Termination for any reason other than for Cause), then (a) on and after Optionee's Termination Date, this Option shall expire immediately with respect to any Shares that are Unvested Shares and may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date and (b) this Option, to the extent (and only to the extent) that it is exercisable with respect to Vested Shares on Optionee's Termination Date, may be exercised by Optionee (or Optionee's legal representative) no later than twelve (12) months after Optionee's Termination Date, but in no event later than the Expiration Date. Any exercise of this Option beyond (i) three (3) months after the date Optionee ceases to be an employee when Optionee's Termination is for any reason other than Optionee's death or disability, within the meaning of Section 22(e)(3) of the Code; or (ii) twelve (12) months after the date Optionee ceases to be an employee when the termination is for Optionee's disability, within the meaning of Section 22(e)(3) of the Code, is deemed to be an NQSO.

3.3. Termination for Cause. If Optionee is Terminated for Cause, then Optionee may exercise this Option, but only with respect to any Shares that are Vested Shares on Optionee's Termination Date, and this Option shall expire on Optionee's Termination Date, or at such later time and on such conditions as may be affirmatively determined by the Committee. On and after Optionee's Termination Date, this Option shall expire immediately with respect to any Shares that are Unvested Shares and may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date.

3.4. No Obligation to Employ. Nothing in the Plan or this Agreement shall confer on Optionee any right to continue in the employ of, or other relationship with, the Company or any Parent or Subsidiary of the Company, or limit in any way the right of the Company or any Parent or Subsidiary of the Company to terminate Optionee's employment or other relationship at any time, with or without Cause.

4. MANNER OF EXERCISE.

4.1. Stock Option Exercise Notice and Agreement. To exercise this Option, Optionee (or in the case of exercise after Optionee's death or incapacity, Optionee's executor, administrator, heir or legatee, as the case may be) must deliver to the Company an executed Stock Option Exercise Notice and Agreement in the form attached hereto as **Annex A**, or in such other form as may be approved by the Committee from time to time (the "***Exercise Agreement***") and payment for the shares being purchased in accordance with this Agreement. The Exercise Agreement shall set forth, among other things, (i) Optionee's election to exercise this Option, (ii) the number of Shares being purchased, (iii) any representations, warranties and agreements regarding Optionee's investment intent and access to information as may be required by the Company to comply with applicable securities laws in connection with any exercise of this Option and (iv) any other agreements required by the Company to the Company. If someone other than Optionee exercises this Option, then such person must submit documentation reasonably acceptable to the Company verifying that such person has the legal right to exercise this Option and such person shall be subject to all of the restrictions contained herein as if such person were Optionee.

4.2. Limitations on Exercise. This Option may not be exercised unless such exercise is in compliance with all applicable federal and state securities laws, as they are in effect on the date of exercise.

4.3. Payment. The Exercise Agreement shall be accompanied by full payment of the Exercise Price for the shares being purchased in cash (by check or wire transfer), or where permitted by law:

(a) by cancellation of indebtedness of the Company owed to Optionee;

(b) by surrender of shares of the Company that are free and clear of all security interests, pledges, liens, claims or encumbrances and: (i) for which the Company has received "full payment of the purchase price" within the meaning of SEC Rule 144 (and, if such shares were purchased from the Company by use of a promissory note, such note has been fully paid with respect to such shares) or (ii) that were obtained by Optionee in the public market;

(c) by participating in a formal cashless exercise program implemented by the Committee in connection with the Plan;

(d) provided that a public market for the Common Stock exists, subject to compliance with applicable law, by exercising as set forth below, through a "same day sale" commitment from Optionee and a broker-dealer whereby Optionee irrevocably elects to exercise this Option and to sell a portion of the Shares so purchased sufficient to pay the total Exercise Price, and whereby the broker-dealer irrevocably commits upon receipt of such Shares to forward the total Exercise Price directly to the Company; or

(e) by any combination of the foregoing or any other method of payment approved by the Committee that constitutes legal consideration for the issuance of Shares.

4.4. Tax Withholding. Prior to the issuance of the Shares upon exercise of the Option, Optionee must pay or provide for any applicable federal, state and local withholding obligations of the Company. If the Committee permits, Optionee may provide for payment of withholding taxes upon exercise of the Option by requesting that the Company retain the minimum number of Shares with a Fair Market Value equal to the minimum amount of taxes required to be withheld; or to arrange a mandatory "sell to cover" on Participant's behalf (without further authorization); but in no event will the Company withhold Shares or "sell to cover" if such withholding would result in adverse accounting consequences to the Company. In case of stock withholding or a sell to cover, the Company shall issue the net number of Shares to Optionee by deducting the Shares retained from the Shares issuable upon exercise.

4.5. Issuance of Shares. Provided that the Exercise Agreement and payment are in form and substance satisfactory to counsel for the Company, the Company shall issue the Shares issuable upon a valid exercise of this Option registered in the name of Optionee, Optionee's authorized assignee, or Optionee's legal representative, and shall deliver certificates representing the Shares with the appropriate legends affixed thereto.

5. COMPLIANCE WITH LAWS AND REGULATIONS. The Plan and this Agreement are intended to comply with Section 25102(o) and Rule 701. Any provision of this Agreement that is inconsistent with Section 25102(o) or Rule 701 shall, without further act or amendment by the Company or the Committee, be reformed to comply with the requirements of Section 25102(o) and/or Rule 701. The exercise of this Option and the issuance and transfer of Shares shall be subject to compliance by the Company and Optionee with all applicable requirements of federal and state securities laws and with all applicable requirements of any stock exchange on which the Common Stock may be listed at the time of such issuance or transfer. Optionee understands that the Company is under no obligation to register or qualify the Shares with the SEC, any state securities commission or any stock exchange to effect such compliance.

6. NONTRANSFERABILITY OF OPTION. This Option may not be transferred in any manner other than by will or by the laws of descent and distribution, and, with respect to NQSOs, by instrument to a testamentary trust in which the options are to be passed to beneficiaries upon the death of the trustor (settlor) or a revocable trust, or by gift to "immediate family" as that term is defined in 17 C.F.R. 240.16a-1(e), and may be exercised during the lifetime of Optionee only by Optionee or in the event of Optionee's incapacity, by Optionee's legal representative. The terms of this Option shall be binding upon the executors, administrators, successors and assigns of Optionee.

7. COMPANY'S REPURCHASE OPTION FOR UNVESTED SHARES. If Optionee is Terminated for any reason, or no reason, including without limitation, Optionee's death, Disability, voluntary resignation or termination by the Company with or without Cause and Optionee has acquired Unvested Shares by exercising this Option, then the Company and/or its assignee(s) shall have the option to repurchase all or a portion of Optionee's Unvested Shares (as defined in Section 2.2 of this Agreement) as of the Termination Date on the terms and conditions set forth in this Section 7 (the "***Repurchase Option***").

7.1. Termination and Termination Date. In case of any dispute as to whether Optionee is Terminated, the Committee shall have discretion to determine whether Optionee has been Terminated and the effective date of such Termination (the "***Termination Date***").

7.2. Exercise of Repurchase Option. Subject to the foregoing provisions of this Section, at any time within ninety (90) days after Optionee's Termination Date, the Company and/or its assignee(s), may elect to repurchase any or all of Optionee's Unvested Shares by giving Optionee written notice of exercise of the Repurchase Option.

7.3. Calculation of Repurchase Price for Unvested Shares. The Company or its assignee shall have the option to repurchase from Optionee (or from Optionee's personal representative as the case may be) the Unvested Shares at Optionee's Exercise Price, as such may be proportionately adjusted for any stock split or similar change in the capital structure of the Company as set forth in Section 2.2 of the Plan (the "***Repurchase Price***").

7.4. Payment of Repurchase Price. The Repurchase Price shall be payable, at the option of the Company or its assignee, by check or by cancellation of all or a portion of any outstanding indebtedness owed by Optionee to the Company and/or such assignee, or by any combination thereof. The Repurchase Price shall be paid without interest within the term of the Repurchase Option as described in Section 7.2.

7.5. Right of Termination Unaffected. Nothing in this Agreement shall be construed to limit or otherwise affect in any manner whatsoever the right or power of the Company (or any Parent or Subsidiary of the Company) to terminate Optionee's employment or other relationship with Company (or any Parent or Subsidiary of the Company) at any time, for any reason or no reason, with or without Cause.

8. RESTRICTIONS ON TRANSFER.

8.1. Disposition of Shares. Optionee hereby agrees that Optionee shall make no disposition of any of the Shares (other than as permitted by this Agreement) unless and until:

(a) Optionee shall have notified the Company of the proposed disposition and provided a written summary of the terms and conditions of the proposed disposition;

(b) Optionee shall have complied with all requirements of this Agreement applicable to the disposition of the Shares;

(c) Optionee shall have provided the Company with written assurances, in form and substance satisfactory to counsel for the Company, that (i) the proposed disposition does not require registration of the Shares under the Securities Act or under any applicable state securities laws or (ii) all appropriate actions necessary for compliance with the registration requirements of the Securities Act or of any exemption from registration available under the Securities Act (including Rule 144) or applicable state securities laws have been taken; and

(d) Optionee shall have provided the Company with written assurances, in form and substance satisfactory to the Company, that the proposed disposition will not result in the contravention of any transfer restrictions applicable to the Shares pursuant to the provisions of the regulations promulgated under Section 25102(o), Rule 701 or under any other applicable securities laws or adversely affect the Company's ability to rely on the exemption(s) from registration under the Securities Act or under any other applicable securities laws for the grant of the Option, the issuance of Shares thereunder or any other issuance of securities under the Plan.

8.2. Restriction on Transfer. Optionee shall not transfer, assign, grant a lien or security interest in, pledge, hypothecate, encumber or otherwise dispose of any of the Shares which are subject to the Company's Repurchase Option or the Right of First Refusal described below, except as permitted by this Agreement.

8.3. Transferee Obligations. Each person (other than the Company) to whom the Shares are transferred by means of one of the permitted transfers specified in this Agreement must, as a condition precedent to the validity of such transfer, acknowledge in writing to the Company that such person is bound by the provisions of this Agreement and that the transferred Shares are subject to (i) both the Company's Repurchase Option and the Company's Right of First Refusal granted hereunder and (ii) the market stand-off provisions of Section 9 below, to the same extent such Shares would be so subject if retained by Optionee.

9. MARKET STANDOFF AGREEMENT. Optionee agrees that, subject to any early release provisions that apply pro rata to stockholders of the Company according to their holdings of Common Stock (determined on an as-converted into Common Stock basis), Optionee will not, if requested by the managing underwriter(s) in the initial underwritten sale of Common Stock of the Company to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the Securities Act (the "***IPO***"), for a period of up to one hundred eighty (180) days following the effective date of the registration statement relating to such IPO, directly or indirectly sell, offer to sell, grant any option for the sale of, or otherwise dispose of any Common Stock or securities convertible into Common Stock, except for: (i) transfers of Shares permitted under Section 10.6 hereof so long as such transferee furnishes to the Company and the managing underwriter their written consent to be bound by this Section 9 as a condition precedent to such transfer; and (ii) sales of any securities to be included in the registration statement for the IPO. For the avoidance of doubt, the provisions of this Section shall only apply to the IPO. The restricted period shall in any event terminate two (2) years after the closing date of the IPO. In order to enforce the foregoing covenant, the Company shall have the right to place restrictive legends on the certificates representing the Shares subject to this Section and to impose stop transfer instructions with respect to the Shares until the end of such period. Optionee further agrees to enter into any agreement reasonably required by the underwriters to implement the foregoing restrictions on transfer. For the avoidance of doubt, the foregoing provisions of this Section shall not apply to any registration of securities of the Company (a) under an employee benefit plan or (b) in a merger, consolidation, business combination or similar transaction.

10. COMPANY'S RIGHT OF FIRST REFUSAL. Unvested Shares may not be sold or otherwise transferred, or pledged by Optionee or made subject to a security interest, pledge or other lien without the Company's prior written consent, which may be withheld in the Company's sole and absolute discretion. Before any Vested Shares held by Optionee or any transferee of such Vested Shares (either sometimes referred to herein as the "***Holder"***) may be sold or otherwise transferred (including, without limitation, a transfer by gift or operation of law), the Company and/or its assignee(s) will have a right of first refusal to purchase the Vested Shares to be sold or transferred (the "***Offered Shares"***) on the terms and conditions set forth in this Section (the "***Right of First Refusal"***).

10.1. Notice of Proposed Transfer. The Holder of the Offered Shares will deliver to the Company a written notice (the "***Notice"***) stating: (i) the Holder's bona fide intention to sell or otherwise transfer the Offered Shares; (ii) the name and address of each proposed purchaser or other

transferee (the "***Proposed Transferee"***); (iii) the number of Offered Shares to be transferred to each Proposed Transferee; (iv) the bona fide cash price or other consideration for which the Holder proposes to transfer the Offered Shares (the "***Offered Price"***); and (v) that the Holder acknowledges this Notice is an offer to sell the Offered Shares to the Company and/or its assignee(s) pursuant to the Company's Right of First Refusal at the Offered Price as provided for in this Agreement.

10.2. Exercise of Right of First Refusal. At any time within thirty (30) days after the date of the Notice, the Company and/or its assignee(s) may, by giving written notice to the Holder, elect to purchase all (or, with the consent of the Holder, less than all) the Offered Shares proposed to be transferred to any one or more of the Proposed Transferees named in the Notice, at the purchase price, determined as specified below.

10.3. Purchase Price. The purchase price for the Offered Shares purchased under this Section will be the Offered Price, *provided* that if the Offered Price consists of no legal consideration (as, for example, in the case of a transfer by gift) then the purchase price will be the fair market value of the Offered Shares as determined in good faith by the Committee. If the Offered Price includes consideration other than cash, then the value of the non-cash consideration, as determined in good faith by the Committee, will conclusively be deemed to be the cash equivalent value of such non-cash consideration.

10.4. Payment. Payment of the purchase price for the Offered Shares will be payable, at the option of the Company and/or its assignee(s) (as applicable), by check or by cancellation of all or a portion of any outstanding purchase money indebtedness owed by the Holder to the Company (or to such assignee, in the case of a purchase of Offered Shares by such assignee) or by any combination thereof. The purchase price will be paid without interest within sixty (60) days after the Company's receipt of the Notice, or, at the option of the Company and/or its assignee(s), in the manner and at the time(s) set forth in the Notice.

10.5. Holder's Right to Transfer. If all of the Offered Shares proposed in the Notice to be transferred to a given Proposed Transferee are not purchased by the Company and/or its assignee(s) as provided in this Section, then the Holder may sell or otherwise transfer such Offered Shares to each Proposed Transferee at the Offered Price or at a higher price, *provided* that (i) such sale or other transfer is consummated within ninety (90) days after the date of the Notice, (ii) any such sale or other transfer is effected in compliance with all applicable securities laws, and (iii) each Proposed Transferee agrees in writing that the provisions of this Section will continue to apply to the Offered Shares in the hands of such Proposed Transferee. If the Offered Shares described in the Notice are not transferred to each Proposed Transferee within such ninety (90) day period, then a new Notice must be given to the Company pursuant to which the Company will again be offered the Right of First Refusal before any Shares held by the Holder may be sold or otherwise transferred.

10.6. Exempt Transfers. Notwithstanding anything to the contrary in this Section, the following transfers of Vested Shares will be exempt from the Right of First Refusal: (i) the transfer of any or all of the Vested Shares during Optionee's lifetime by gift or on Optionee's death by will or intestacy to any member(s) of Optionee's "Immediate Family" (as defined below) or to a trust for the benefit of Optionee and/or member(s) of Optionee's Immediate Family, *provided* that each transferee or other recipient agrees in a writing satisfactory to the Company that the provisions of this Section will continue to apply to the transferred Vested Shares in the hands of such transferee or other recipient; (ii) any transfer of Vested Shares made pursuant to a statutory merger, statutory consolidation of the Company with or into another corporation or corporations or a conversion of the Company into another form of legal entity (except that the Right of First Refusal will continue to apply thereafter to such Vested Shares, in which case the surviving corporation of such merger or consolidation or the resulting entity of such conversion shall succeed to the rights of the Company under this Section unless the agreement of merger or consolidation or conversion expressly otherwise provides); or (iii) any transfer of Vested Shares pursuant to the winding up and dissolution of the Company. As used herein, the term "***Immediate Family"*** will mean Optionee's spouse, the lineal descendant or antecedent, father, mother, brother or

sister, child, adopted child, grandchild or adopted grandchild of Optionee or Optionee's spouse, or the spouse of any of the above or Spousal Equivalent, as defined herein. As used herein, a person is deemed to be a "***Spousal Equivalent"*** provided the following circumstances are true: (i) irrespective of whether or not Optionee and the Spousal Equivalent are the same sex, they are the sole spousal equivalent of the other for the last twelve (12) months, (ii) they intend to remain so indefinitely, (iii) neither are married to anyone else, (iv) both are at least 18 years of age and mentally competent to consent to contract, (v) they are not related by blood to a degree of closeness that which would prohibit legal marriage in the state in which they legally reside, (vi) they are jointly responsible for each other's common welfare and financial obligations, and (vii) they reside together in the same residence for the last twelve (12) months and intend to do so indefinitely.

10.7. Termination of Right of First Refusal. The Right of First Refusal will terminate as to all Shares: (i) on the effective date of the first sale of Common Stock of the Company to the general public pursuant to a registration statement filed with and declared effective by the SEC under the Securities Act (other than a registration statement relating solely to the issuance of Common Stock pursuant to a business combination or an employee incentive or benefit plan); (ii) on any transfer or conversion of Shares made pursuant to a statutory merger or statutory consolidation of the Company with or into another corporation or corporations if the common stock of the surviving corporation or any direct or indirect parent corporation thereof is registered under the Exchange Act; or (iii) on any transfer or conversion of Shares made pursuant to a statutory conversion of the Company into another form of legal entity if the common equity (or comparable equity security) of entity resulting from such conversion is registered under the Exchange Act.

10.8. Encumbrances on Vested Shares. Optionee may grant a lien or security interest in, or pledge, hypothecate or encumber Vested Shares only if each party to whom such lien or security interest is granted, or to whom such pledge, hypothecation or other encumbrance is made, agrees in a writing satisfactory to the Company that: (i) such lien, security interest, pledge, hypothecation or encumbrance will not adversely affect or impair the Right of First Refusal or the rights of the Company and/or its assignee(s) with respect thereto and will not apply to such Vested Shares after they are acquired by the Company and/or its assignees under this Section; and (ii) the provisions of this Agreement will continue to apply to such Vested Shares in the hands of such party and any transferee of such party. Optionee may not grant a lien or security interest in, or pledge, hypothecate or encumber, any Unvested Shares.

11. RIGHTS AS A STOCKHOLDER. Optionee shall not have any of the rights of a stockholder with respect to any Shares unless and until such Shares are issued to Optionee. Subject to the terms and conditions of this Agreement, Optionee will have all of the rights of a stockholder of the Company with respect to the Shares from and after the date that Shares are issued to Optionee pursuant to, and in accordance with, the terms of the Exercise Agreement until such time as Optionee disposes of the Shares or the Company and/or its assignee(s) exercise(s) the Repurchase Option or the Right of First Refusal. Upon an exercise of the Repurchase Option or the Right of First Refusal, Optionee will have no further rights as a holder of the Shares so purchased upon such exercise, other than the right to receive payment for the Shares so purchased in accordance with the provisions of this Agreement, and Optionee will promptly surrender the stock certificate(s) evidencing the Shares so purchased to the Company for transfer or cancellation.

12. ESCROW. As security for Optionee's faithful performance of this Agreement, Optionee agrees, immediately upon receipt of the stock certificate(s) evidencing the Shares, to deliver such certificate(s) to the Secretary of the Company or other designee of the Company (the "***Escrow Holder***"), who is hereby appointed to hold such certificate(s) and to take all such actions and to effectuate all such transfers and/or releases of such Shares as are in accordance with the terms of this Agreement. Optionee and the Company agree that Escrow Holder will not be liable to any party to this Agreement (or to any other party) for any actions or omissions unless Escrow Holder is grossly negligent or intentionally fraudulent in carrying out the duties of Escrow Holder under this Agreement. Escrow Holder may rely

upon any letter, notice or other document executed with any signature purported to be genuine and may rely on the advice of counsel and obey any order of any court with respect to the transactions contemplated by this Agreement and will not be liable for any act or omission taken by Escrow Holder in good faith reliance on such documents, the advice of counsel or a court order. The Shares will be released from escrow upon termination of both the Repurchase Option and the Right of First Refusal.

13. RESTRICTIVE LEGENDS AND STOP-TRANSFER ORDERS.

13.1. Legends. Optionee understands and agrees that the Company will place the legends set forth below or similar legends on any stock certificate(s) evidencing the Shares, together with any other legends that may be required by state or U.S. Federal securities laws, the Company's Certificate of Incorporation or Bylaws, any other agreement between Optionee and the Company, or any agreement between Optionee and any third party (and any other legend(s) that the Company may become obligated to place on the stock certificate(s) evidencing the Shares under the terms of any agreement to which the Company is or may become bound or obligated):

(a) THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER THE SECURITIES LAWS OF CERTAIN STATES. THESE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE AND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS, PURSUANT TO REGISTRATION OR EXEMPTION THEREFROM. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF THIS INVESTMENT FOR AN INDEFINITE PERIOD OF TIME. THE ISSUER OF THESE SECURITIES MAY REQUIRE AN OPINION OF COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER TO THE EFFECT THAT ANY PROPOSED TRANSFER OR RESALE IS IN COMPLIANCE WITH THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

(b) THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO CERTAIN RESTRICTIONS ON RESALE AND TRANSFER, INCLUDING THE REPURCHASE OPTION AND RIGHT OF FIRST REFUSAL HELD BY THE ISSUER AND/OR ITS ASSIGNEE(S) AS SET FORTH IN A STOCK OPTION AGREEMENT BETWEEN THE ISSUER AND THE ORIGINAL HOLDER OF THESE SHARES, A COPY OF WHICH MAY BE OBTAINED AT THE PRINCIPAL OFFICE OF THE ISSUER. SUCH SALE AND TRANSFER RESTRICTIONS, INCLUDING THE REPURCHASE OPTION AND RIGHT OF FIRST REFUSAL, ARE BINDING ON TRANSFEREES OF THESE SHARES.

(c) THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A MARKET STANDOFF RESTRICTION AS SET FORTH IN A CERTAIN STOCK OPTION AGREEMENT BETWEEN THE ISSUER AND THE ORIGINAL HOLDER OF THESE SHARES, A COPY OF WHICH MAY BE OBTAINED AT THE PRINCIPAL OFFICE OF THE ISSUER. AS A RESULT OF SUCH AGREEMENT, THESE SHARES MAY NOT BE TRADED PRIOR TO 180 DAYS AFTER THE EFFECTIVE DATE OF CERTAIN PUBLIC OFFERINGS OF THE COMMON STOCK OF THE ISSUER HEREOF. SUCH RESTRICTION IS BINDING ON TRANSFEREES OF THESE SHARES.

13.2. Stop-Transfer Instructions. Optionee agrees that, to ensure compliance with the restrictions imposed by this Agreement, the Company may issue appropriate "stop-transfer" instructions to its transfer agent, if any, and if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

13.3. Refusal to Transfer. The Company will not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this

Agreement or (ii) to treat as owner of such Shares, or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares have been so transferred.

14. CERTAIN TAX CONSEQUENCES. Set forth below is a brief summary as of the Effective Date of the Plan of some of the federal tax consequences of exercise of the Option and disposition of the Shares. THIS SUMMARY IS NECESSARILY INCOMPLETE, AND THE TAX LAWS AND REGULATIONS ARE SUBJECT TO CHANGE. OPTIONEE SHOULD CONSULT A TAX ADVISER BEFORE EXERCISING THE OPTION OR DISPOSING OF THE SHARES.

14.1. Exercise of ISO. If the Option qualifies as an ISO, there will be no regular federal income tax liability upon the exercise of the Option, although the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price will be treated as a tax preference item for federal alternative minimum tax purposes and may subject Optionee to the alternative minimum tax in the year of exercise.

14.2. Exercise of Nonqualified Stock Option. If the Option does not qualify as an ISO, there may be a regular federal income tax liability upon the exercise of the Option. Optionee will be treated as having received compensation income (taxable at ordinary income tax rates) equal to the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price. If Optionee is a current or former employee of the Company, the Company may be required to withhold from Optionee's compensation or collect from Optionee and pay to the applicable taxing authorities an amount equal to a percentage of this compensation income at the time of exercise.

14.3. Disposition of Shares. The following tax consequences may apply upon disposition of the Shares.

(a) Incentive Stock Options. If the Shares are held for more than twelve (12) months after the date of purchase of the Shares pursuant to the exercise of an ISO and are disposed of more than two (2) years after the Date of Grant, any gain realized on disposition of the Shares will be treated as long term capital gain for federal income tax purposes. If Vested Shares purchased under an ISO are disposed of within the applicable one (1) year or two (2) year period, any gain realized on such disposition will be treated as compensation income (taxable at ordinary income rates in the year of the disposition) to the extent of the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price. To the extent the Shares were exercised prior to vesting coincident with the filing of an 83(b) Election, the amount taxed because of a disqualifying disposition will be based upon the excess, if any, of the fair market value on the date of vesting over the exercise price.

(b) Nonqualified Stock Options. If the Shares are held for more than twelve (12) months after the date of purchase of the Shares pursuant to the exercise of an NQSO, any gain realized on disposition of the Shares will be treated as long term capital gain.

14.4. Section 83(b) Election for Unvested Shares. With respect to Unvested Shares, which are subject to the Repurchase Option, unless an election is filed by Optionee with the Internal Revenue Service (and, if necessary, the proper state taxing authorities), within thirty (30) days of the purchase of the Unvested Shares, electing pursuant to Section 83(b) of the Code (and similar state tax provisions, if applicable) to be taxed currently on any difference between the Exercise Price of the Unvested Shares and their Fair Market Value on the date of purchase, there may be a recognition of taxable income (including, where applicable, alternative minimum taxable income) to Optionee, measured by the excess, if any, of the Fair Market Value of the Unvested Shares at the time they cease to be Unvested Shares, over the Exercise Price of the Unvested Shares.

15. GENERAL PROVISIONS.

15.1. Interpretation. Any dispute regarding the interpretation of this Agreement shall

be submitted by Optionee or the Company to the Committee for review. The resolution of such a dispute by the Committee shall be final and binding on the Company and Optionee.

15.2. Entire Agreement. The Plan, the Grant Notice and the Exercise Agreement are each incorporated herein by reference. This Agreement, the Grant Notice, the Plan and the Exercise Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede all prior undertakings and agreements with respect to such subject matter.

16. NOTICES. Any and all notices required or permitted to be given to a party pursuant to the provisions of this Agreement will be in writing and will be effective and deemed to provide such party sufficient notice under this Agreement on the earliest of the following: (i) at the time of personal delivery, if delivery is in person; (ii) at the time an electronic confirmation of receipt is received, if delivery is by email; (iii) at the time of transmission by facsimile, addressed to the other party at its facsimile number specified herein (or hereafter modified by subsequent notice to the parties hereto), with confirmation of receipt made by both telephone and printed confirmation sheet verifying successful transmission of the facsimile; (iv) one (1) business day after deposit with an express overnight courier for United States deliveries, or two (2) business days after such deposit for deliveries outside of the United States, with proof of delivery from the courier requested; or (v) three (3) business days after deposit in the United States mail by certified mail (return receipt requested) for United States deliveries. Any notice for delivery outside the United States will be sent by email, facsimile or by express courier. Any notice not delivered personally or by email will be sent with postage and/or other charges prepaid and properly addressed to Optionee at the last known address or facsimile number on the books of the Company, or at such other address or facsimile number as such other party may designate by one of the indicated means of notice herein to the other parties hereto or, in the case of the Company, to it at its principal place of business. Notices to the Company will be marked “Attention: Chief Financial Officer.” Notices by facsimile shall be machine verified as received.

17. SUCCESSORS AND ASSIGNS. The Company may assign any of its rights under this Agreement including its rights to purchase Shares under both the Right of First Refusal and Repurchase Option. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth herein, this Agreement shall be binding upon Optionee and Optionee’s heirs, executors, administrators, legal representatives, successors and assigns.

18. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the internal laws of the State of Delaware as such laws are applied to agreements between Delaware residents entered into and to be performed entirely within Delaware. If any provision of this Agreement is determined by a court of law to be illegal or unenforceable, then such provision will be enforced to the maximum extent possible and the other provisions will remain fully effective and enforceable.

19. FURTHER ASSURANCES. The parties agree to execute such further documents and instruments and to take such further actions as may be reasonably necessary to carry out the purposes and intent of this Agreement.

20. TITLES AND HEADINGS. The titles, captions and headings of this Agreement are included for ease of reference only and will be disregarded in interpreting or construing this Agreement. Unless otherwise specifically stated, all references herein to “sections” and “exhibits” will mean “sections” and “exhibits” to this Agreement.

21. COUNTERPARTS. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered will be deemed an original, and all of which together shall constitute one and the same agreement.

22. SEVERABILITY. If any provision of this Agreement is determined by any court or arbitrator of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such provision will be enforced to the maximum extent possible given the intent of the parties hereto. If such clause or provision cannot be so enforced, such provision shall be stricken from this Agreement and the remainder of this Agreement shall be enforced as if such invalid, illegal or unenforceable clause or provision had (to the extent not enforceable) never been contained in this Agreement. Notwithstanding the forgoing, if the value of this Agreement based upon the substantial benefit of the bargain for any party is materially impaired, which determination as made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

* * * * *

Attachments:

Annex A: Form of Stock Option Exercise Notice and Agreement

ANNEX A

FORM OF STOCK OPTION EXERCISE NOTICE AND AGREEMENT

STOCK OPTION EXERCISE NOTICE AND AGREEMENT

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

NOTE: *You must sign this Notice on Page 3 before submitting it to Stoke Therapeutics, Inc. (the "Company").

OPTIONEE INFORMATION: *Please provide the following information about yourself ("**Optionee**")*:

Name: _____ Social Security Number: _____

Address: _____ Employee Number: _____

_____

OPTION INFORMATION: *Please provide this information on the option being exercised* (*the "**Option**"*):

Grant No.

Date of Grant:

Option Price per Share: $____

Total number of shares of Common Stock of the Company subject to the Option:

Type of Stock Option:

☐ Nonqualified (NQSO)

☐ Incentive (ISO)

EXERCISE INFORMATION:

Number of shares of Common Stock of the Company for which the Option is now being exercised [_____]. (These shares are referred to below as the "***Purchased Shares***.")

Total Exercise Price Being Paid for the Purchased Shares: $_____

Form of payment enclosed ***[check all that apply]***:

☐ Check for $_____, payable to "***Stoke Therapeutics, Inc.***."

☐ Certificate(s) for _____ shares of Common Stock of the Company. These shares will be valued as of the date this notice is received by the Company. ***[Requires Company consent.]***

AGREEMENTS, REPRESENTATIONS AND ACKNOWLEDGMENTS OF OPTIONEE: By signing this Stock Option Exercise Notice and Agreement, Optionee hereby agrees with, and represents to, the Company as follows:

1. **Terms Governing.** I acknowledge and agree with the Company that I am acquiring the Purchased Shares by exercise of this Option subject to all other terms and conditions of the Notice of Stock Option Grant and the Stock Option Agreement that govern the Option, including without limitation the terms of the Company's 2014 Equity Incentive Plan, as it may be amended (the "***Plan***").

2. **Investment Intent; Securities Law Restrictions.** I represent and warrant to the Company that I am acquiring and will hold the Purchased Shares for investment for my account only, and not with a view to, or for resale in connection with, any "distribution" of the Purchased Shares within the meaning of the Securities Act of 1933, as amended (the "***Securities Act***"). I understand that the Purchased Shares

have not been registered under the Securities Act by reason of a specific exemption from such registration requirement and that the Purchased Shares must be held by me indefinitely, unless they are subsequently registered under the Securities Act or I obtain an opinion of counsel (in form and substance satisfactory to the Company and its counsel) that registration is not required. I acknowledge that the Company is under no obligation to register the Purchased Shares under the Securities Act or under any other securities law.

3. **Restrictions on Transfer: Rule 144.** I will not sell, transfer or otherwise dispose of the Purchased Shares in violation of the Securities Act, the Securities Exchange Act of 1934, or the rules promulgated thereunder (including Rule 144 under the Securities Act described below "Rule 144")) or of any other applicable securities laws. I am aware of Rule 144, which permits limited public resales of securities acquired in a non-public offering, subject to satisfaction of certain conditions, which include (without limitation) that: (a) certain current public information about the Company is available; (b) the resale occurs only after the holding period required by Rule 144 has been met; (c) the sale occurs through an unsolicited "broker's transaction;" and (d) the amount of securities being sold during any three-month period does not exceed specified limitations. I understand that the conditions for resale set forth in Rule 144 have not been satisfied and that the Company has no plans to satisfy these conditions in the foreseeable future.

4. **Access to Information; Understanding of Risk in Investment.** I acknowledge that I have received and had access to such information as I consider necessary or appropriate for deciding whether to invest in the Purchased Shares and that I had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the issuance of the Purchased Shares. I am aware that my investment in the Company is a speculative investment that has limited liquidity and is subject to the risk of complete loss. I am able, without impairing my financial condition, to hold the Purchased Shares for an indefinite period and to suffer a complete loss of my investment in the Purchased Shares.

5. **Rights of First Refusal; Repurchase Options; Market Stand-off.** I acknowledge that the Purchased Shares remain subject to the Company's Right of First Refusal, the Company's Repurchase Option (with respect to unvested Purchased Shares) and the market stand-off covenants (sometimes referred to as the "lock-up"), all in accordance with the applicable Notice of Stock Option Grant and the Stock Option Agreement that govern the Option

6. **Form of Ownership.** I acknowledge that the Company has encouraged me to consult my own adviser to determine the form of ownership of the Purchased Shares that is appropriate for me. In the event that I choose to transfer my Purchased Shares to a trust, I agree to sign a Stock Transfer Agreement. In the event that I choose to transfer my Purchased Shares to a trust that is not an eligible revocable trust, I also acknowledge that the transfer will be treated as a "disposition" for tax purposes. As a result, the favorable ISO tax treatment will be unavailable and other unfavorable tax consequences may occur.

7. **Investigation of Tax Consequences.** I acknowledge that the Company has encouraged me to consult my own adviser to determine the tax consequences of acquiring the Purchased Shares at this time.

8. **Other Tax Matters.** I agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes my tax liabilities. I will not make any claim against the Company or its Board, officers or employees related to tax liabilities arising from my options or my other compensation. In particular, I acknowledge that my options (including the Option) are exempt from Section 409A of the Internal Revenue Code only if the exercise price per share is at least equal to the fair market value per share of the Common Stock at the time the option was granted by the Board. Since shares of the Common Stock are not traded on an established securities market, the determination of their fair market value was made by the Board and/or by an independent valuation firm retained by the Company. I acknowledge that there is no guarantee in

either case that the Internal Revenue Service will agree with the valuation, and I will not make any claim against the Company or its Board of Directors, officers or employees in the event that the Internal Revenue Service asserts that the valuation was too low.

9. **Spouse Consent.** I agree to seek the consent of my spouse to the extent required by the Company to enforce the foregoing.

10. **Tax Withholding.** As a condition of exercising this Option, I agree to make adequate provision for foreign, federal, state or other tax withholding obligations, if any, which arise upon the grant, vesting or exercise of this Option, or disposition of the Purchased Shares, whether by withholding, direct payment to the Company, or otherwise.

IMPORTANT NOTE: UNVESTED PURCHASED SHARES ARE SUBJECT TO REPURCHASE BY THE COMPANY. PLEASE CONSULT WITH YOUR TAX ADVISER CONCERNING THE ADVISABILITY OF FILING AN 83(b) ELECTION WITH THE INTERNAL REVENUE SERVICE WHICH MUST BE FILED WITHIN THIRTY (30) DAYS AFTER THE PURCHASE OF SHARES TO BE EFFECTIVE.

A form of Election under Section 83(b) is attached hereto as Exhibit 1 for reference. Unless an 83(b) election is timely filed with the Internal Revenue Service (and, if necessary, the proper state taxing authorities), electing pursuant to Section 83(b) of the Internal Revenue Code (and similar state tax provisions, if applicable) to be taxed currently on any difference between the purchase price of the Unvested Purchased Shares and their fair market value on the date of purchase, there may be a recognition of taxable income (including, where applicable, alternative minimum taxable income) to you, measured by the excess, if any, of the Fair Market Value of the Unvested Purchased Shares at the time they cease to be Unvested Purchased Shares, over the purchase price of the Unvested Purchased Shares.

The undersigned hereby executes and delivers this Stock Option Exercise Notice and Agreement and agrees to be bound by its terms

SIGNATURE: **DATE:**

Optionee's Name:

Attachments:

Exhibit 1 – Section 83(b) Election Form

[Signature Page to Stock Option Exercise Notice and Agreement]

EXHIBIT 1

SECTION 83(b) ELECTION

ELECTION UNDER SECTION 83(b) OF THE INTERNAL REVENUE CODE

The undersigned Taxpayer hereby elects, pursuant to Section 83(b) of the Internal Revenue Code of 1986, as amended, to include the excess, if any, of the fair market value of the property described below at the time of transfer over the amount paid for such property, as compensation for services in the calculation of: (1) regular gross income; (2) alternative minimum taxable income; or (3) disqualifying disposition gross income, as the case may be.

1. TAXPAYER'S NAME: _____

   TAXPAYER'S ADDRESS: _____

   _____

   SOCIAL SECURITY NUMBER: _____

2. The property with respect to which the election is made is described as follows: _____ shares of Common Stock, par value $0.0001 per share, of Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), which were transferred upon exercise of an option by the Company, which is Taxpayer's employer or the corporation for whom the Taxpayer performs services.

3. The date on which the shares were transferred was pursuant to the exercise of the option was _____, _____ and this election is made for calendar year ____.

4. The shares are subject to the following restrictions: The Company may repurchase all or a portion of the shares at the Taxpayer's original purchase price under certain conditions at the time of Taxpayer's termination of employment or services.

5. The fair market value of the shares (without regard to restrictions other than restrictions which by their terms will never lapse) was $_____ per share x _____ shares = $_____ at the time of exercise of the option.

6. The amount paid for such shares upon exercise of the option was $____ per share x _____ shares = $_____.

7. The Taxpayer has submitted a copy of this statement to the Company.

8. The amount to include in gross income is $_____. [The result of the amount reported in Item 5 minus the amount reported in Item 6.]

*THIS ELECTION MUST BE FILED WITH THE INTERNAL REVENUE SERVICE ("**IRS**"), AT THE OFFICE WHERE THE TAXPAYER FILES ANNUAL INCOME TAX RETURNS, WITHIN 30 DAYS AFTER THE DATE OF TRANSFER OF THE SHARES, AND MUST ALSO BE FILED WITH THE TAXPAYER'S INCOME TAX RETURNS FOR THE CALENDAR YEAR. THE ELECTION CANNOT BE REVOKED WITHOUT THE CONSENT OF THE IRS.*

Dated: _____ _____

Taxpayer's Signature

NOTICE OF STOCK OPTION GRANT

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

The Optionee named below ("***Optionee***") has been granted an option (this "***Option***") to purchase shares of Common Stock, $0.0001 par value per share (the "***Common Stock***"), of Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), pursuant to the Company's 2014 Equity Incentive Plan, as amended from time to time (the "***Plan***") on the terms, and subject to the conditions, described below and in the Stock Option Agreement attached hereto as **Exhibit A**, including its annexes (the "***Stock Option Agreement***").

Optionee:	
Maximum Number of Shares Subject to this Option (the "*Shares*"):	
Exercise Price Per Share:	$____ per share
Date of Grant:	
Vesting Start Date:	
Exercise Schedule:	This Option will become exercisable during its term with respect to portions of the Shares in accordance with the Vesting Schedule set forth below.
Expiration Date:	The date ten (10) years after the Date of Grant set forth above, subject to earlier expiration in the event of Termination as provided in Section 3 of the Stock Option Agreement.
Tax Status of Option: (Check *Only* One Box):	☐ Incentive Stock Option (*To the fullest extent permitted by the Code*) ☐ Nonqualified Stock Option. (*If neither box is checked, this Option is a Nonqualified Stock Option*).

Vesting Schedule [EXAMPLE ONLY]: For so long as Optionee continuously provides services to the Company (or any Subsidiary or Parent of the Company) as an employee, officer, director, contractor or consultant, this Option will vest (that is, become exercisable) with respect to the Shares as follows: (a) prior to the first one (1) year anniversary of the Vesting Start Date this Option will not be vested or exercisable as to any of the Shares; (b) this Option will become vested and exercisable with respect to [**1/4th]** of the Shares on the one (1) year anniversary of the Vesting Start Date; and (c) thereafter, this Option will become vested and exercisable with respect to an additional [**1/48th**] of the Shares when Optionee completes each month of continuous service following the first one (1) year anniversary of the Vesting Start Date.

General; Agreement: By their signatures below, Optionee and the Company agree that this Option is granted under and governed by this Notice of Stock Option Grant (this "***Grant Notice***") and by the provisions of the Plan and the Stock Option Agreement. The Plan and the Stock Option Agreement are incorporated herein by reference. Capitalized terms used but not defined herein shall have the meanings given to them in the Plan or in the Stock Option Agreement, as applicable. By signing below, Optionee acknowledges receipt of a copy of this Grant Notice, the Plan and the Stock Option Agreement, represents that Optionee has carefully read and is familiar with their provisions, and hereby accepts the Option subject to all of their respective terms and conditions. Optionee acknowledges that there may be adverse tax consequences upon exercise of the Option or disposition of the Shares and that Optionee should consult a tax adviser prior to such exercise or disposition.

Execution and Delivery: This Grant Notice may be executed and delivered electronically whether via the Company's intranet or the Internet site of a third party or via email or any other means of electronic delivery specified by the Company. By Optionee's acceptance hereof (whether written, electronic or otherwise), Optionee agrees, to the fullest extent permitted by law, that in lieu of receiving documents in paper format, Optionee accepts the electronic delivery of any documents that the Company (or any third party the Company may designate), may deliver in connection with this grant (including the Plan, this Grant Notice, the Stock Option Agreement, the information described in Rules 701(e)(2), (3), (4) and (5) under the Securities Act (the "***701 Disclosures***"), account statements, or other communications or information) whether via the Company's intranet or the Internet site of such third party or via email or such other means of electronic delivery specified by the Company.

Stoke Therapeutics, Inc.

By /Signature: _____ Optionee Signature: _____

Typed Name: _____ Optionee's Name: _____

Title: _____

ATTACHMENT: Exhibit A – Stock Option Agreement

Exhibit A

Stock Option Agreement

EXHIBIT A

STOCK OPTION AGREEMENT

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

This Stock Option Agreement (this "***Agreement***") is made and entered into as of the date of grant (the "***Date of Grant***") set forth on the Notice of Stock Option Grant attached as the facing page to this Agreement (the "***Grant Notice***") by and between Stoke Therapeutics, Inc., a Delaware corporation (the "***Company***"), and the optionee named on the Grant Notice ("***Optionee***"). Capitalized terms not defined in this Agreement shall have the meaning ascribed to them in the Company's 2014 Equity Incentive Plan, as amended from time to time (the "***Plan***"), or in the Grant Notice, as applicable.

1. GRANT OF OPTION. The Company hereby grants to Optionee an option (this "***Option***") to purchase up to the total number of shares of Common Stock of the Company, $0.0001 par value per share (the "***Common Stock***"), set forth in the Grant Notice as the Shares (the "***Shares***") at the Exercise Price Per Share set forth in the Grant Notice (the "***Exercise Price***"), subject to all of the terms and conditions of the Grant Notice, this Agreement and the Plan. If designated as an Incentive Stock Option in the Grant Notice, this Option is intended to qualify as an incentive stock option (the "***ISO***") within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended (the "***Code***"), except that if on the Date of Grant Optionee is not subject to U.S. income tax, then this Option shall be a NQSO.

2. EXERCISE PERIOD.

2.1 Exercise Period of Option. This Option is considered to be "vested" with respect to any particular Shares when this Option is exercisable with respect to such Shares. This Option will become vested during its term as to portions of the Shares in accordance with the Vesting Schedule set forth in the Grant Notice. Notwithstanding any provision in the Plan or this Agreement to the contrary, on or after Optionee's Termination Date, this Option may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date.

2.2 Vesting of Option Shares. Shares with respect to which this Option is vested and exercisable at a given time pursuant to the Vesting Schedule set forth in the Grant Notice are "***Vested Shares***." Shares with respect to which this Option is not vested and exercisable at a given time pursuant to the Vesting Schedule set forth in the Grant Notice are "***Unvested Shares***."

2.3 Expiration. The Option shall expire on the Expiration Date set forth in the Grant Notice or earlier as provided in Section **Error! Reference source not found.** below.

3. TERMINATION.

3.1 Termination for Any Reason Except Death, Disability or Cause. Except as provided in subsection 3.2 in a case in which Optionee dies within three (3) months after Optionee is Terminated other than for Cause, if Optionee is Terminated for any reason (other than Optionee's death or Disability or for Cause), then (a) on and after Optionee's Termination Date, this Option shall expire immediately with respect to any Shares that are Unvested Shares and may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date and (b) this Option to the extent (and only to the extent) that it is exercisable with respect to Vested Shares on Optionee's Termination Date, may be exercised by Optionee no later than three (3) months after Optionee's Termination Date (but in no event may this Option be exercised after the Expiration Date).

3.2 Termination Because of Death or Disability. If Optionee is Terminated because of Optionee's death or Disability (or if Optionee dies within three (3) months of the date of

Optionee's Termination for any reason other than for Cause), then (a) on and after Optionee's Termination Date, this Option shall expire immediately with respect to any Shares that are Unvested Shares and may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date and (b) this Option, to the extent (and only to the extent) that it is exercisable with respect to Vested Shares on Optionee's Termination Date, may be exercised by Optionee (or Optionee's legal representative) no later than twelve (12) months after Optionee's Termination Date, but in no event later than the Expiration Date. Any exercise of this Option beyond (i) three (3) months after the date Optionee ceases to be an employee when Optionee's Termination is for any reason other than Optionee's death or disability, within the meaning of Section 22(e)(3) of the Code; or (ii) twelve (12) months after the date Optionee ceases to be an employee when the termination is for Optionee's disability, within the meaning of Section 22(e)(3) of the Code, is deemed to be an NQSO.

3.3 Termination for Cause. If Optionee is Terminated for Cause, then Optionee may exercise this Option, but only with respect to any Shares that are Vested Shares on Optionee's Termination Date, and this Option shall expire on Optionee's Termination Date, or at such later time and on such conditions as may be affirmatively determined by the Committee. On and after Optionee's Termination Date, this Option shall expire immediately with respect to any Shares that are Unvested Shares and may not be exercised with respect to any Shares that are Unvested Shares on Optionee's Termination Date.

3.4 No Obligation to Employ. Nothing in the Plan or this Agreement shall confer on Optionee any right to continue in the employ of, or other relationship with, the Company or any Parent or Subsidiary of the Company, or limit in any way the right of the Company or any Parent or Subsidiary of the Company to terminate Optionee's employment or other relationship at any time, with or without Cause.

4. MANNER OF EXERCISE.

4.1 Stock Option Exercise Notice and Agreement. To exercise this Option, Optionee (or in the case of exercise after Optionee's death or incapacity, Optionee's executor, administrator, heir or legatee, as the case may be) must deliver to the Company an executed Stock Option Exercise Notice and Agreement in the form attached hereto as **Annex A**, or in such other form as may be approved by the Committee from time to time (the "***Exercise Agreement***") and payment for the shares being purchased in accordance with this Agreement. The Exercise Agreement shall set forth, among other things, (i) Optionee's election to exercise this Option, (ii) the number of Shares being purchased, (iii) any representations, warranties and agreements regarding Optionee's investment intent and access to information as may be required by the Company to comply with applicable securities laws in connection with any exercise of this Option and (iv) any other agreements required by the Company. If someone other than Optionee exercises this Option, then such person must submit documentation reasonably acceptable to the Company verifying that such person has the legal right to exercise this Option and such person shall be subject to all of the restrictions contained herein as if such person were Optionee.

4.2 Limitations on Exercise. This Option may not be exercised unless such exercise is in compliance with all applicable federal and state securities laws, as they are in effect on the date of exercise.

4.3 Payment. The Exercise Agreement shall be accompanied by full payment of the Exercise Price for the shares being purchased in cash (by check or wire transfer), or where permitted by law:

(a) by cancellation of indebtedness of the Company owed to Optionee;

(b) by surrender of shares of the Company that are free and clear of all security interests, pledges, liens, claims or encumbrances and: (i) for which the Company has received

"full payment of the purchase price" within the meaning of SEC Rule 144 (and, if such shares were purchased from the Company by use of a promissory note, such note has been fully paid with respect to such shares) or (ii) that were obtained by Optionee in the public market;

(c) by participating in a formal cashless exercise program implemented by the Committee in connection with the Plan;

(d) provided that a public market for the Common Stock exists and subject to compliance with applicable law, by exercising as set forth below, through a "same day sale" commitment from Optionee and a broker-dealer whereby Optionee irrevocably elects to exercise this Option and to sell a portion of the Shares so purchased sufficient to pay the total Exercise Price, and whereby the broker-dealer irrevocably commits upon receipt of such Shares to forward the total Exercise Price directly to the Company; or

(e) by any combination of the foregoing or any other method of payment approved by the Committee that constitutes legal consideration for the issuance of Shares.

4.4 Tax Withholding. Prior to the issuance of the Shares upon exercise of the Option, Optionee must pay or provide for any applicable federal, state and local withholding obligations of the Company. If the Committee permits, Optionee may provide for payment of withholding taxes upon exercise of the Option by requesting that the Company retain the minimum number of Shares with a Fair Market Value equal to the minimum amount of taxes required to be withheld; or to arrange a mandatory "sell to cover" on Participant's behalf (without further authorization); but in no event will the Company withhold Shares or "sell to cover" if such withholding would result in adverse accounting consequences to the Company. In case of stock withholding or a sell to cover, the Company shall issue the net number of Shares to Optionee by deducting the Shares retained from the Shares issuable upon exercise.

4.5 Issuance of Shares. Provided that the Exercise Agreement and payment are in form and substance satisfactory to counsel for the Company, the Company shall issue the Shares issuable upon a valid exercise of this Option registered in the name of Optionee, Optionee's authorized assignee, or Optionee's legal representative, and shall deliver certificates representing the Shares with the appropriate legends affixed thereto.

5. COMPLIANCE WITH LAWS AND REGULATIONS. The Plan and this Agreement are intended to comply with Section 25102(o) and Rule 701. Any provision of this Agreement that is inconsistent with Section 25102(o) or Rule 701 shall, without further act or amendment by the Company or the Committee, be reformed to comply with the requirements of Section 25102(o) and/or Rule 701. The exercise of this Option and the issuance and transfer of Shares shall be subject to compliance by the Company and Optionee with all applicable requirements of federal and state securities laws and with all applicable requirements of any stock exchange on which the Common Stock may be listed at the time of such issuance or transfer. Optionee understands that the Company is under no obligation to register or qualify the Shares with the SEC, any state securities commission or any stock exchange to effect such compliance.

6. NONTRANSFERABILITY OF OPTION. This Option may not be transferred in any manner other than by will or by the laws of descent and distribution, and, with respect to NQSOs, by instrument to a testamentary trust in which the options are to be passed to beneficiaries upon the death of the trustor (settlor) or a revocable trust, or by gift to "immediate family" as that term is defined in 17 C.F.R. 240.16a-1(e), and may be exercised during the lifetime of Optionee only by Optionee or in the event of Optionee's incapacity, by Optionee's legal representative. The terms of this Option shall be binding upon the executors, administrators, successors and assigns of Optionee.

7. RESTRICTIONS ON TRANSFER.

7.1 Disposition of Shares. Optionee hereby agrees that Optionee shall make no disposition of any of the Shares (other than as permitted by this Agreement) unless and until:

(a) Optionee shall have notified the Company of the proposed disposition and provided a written summary of the terms and conditions of the proposed disposition;

(b) Optionee shall have complied with all requirements of this Agreement applicable to the disposition of the Shares;

(c) Optionee shall have provided the Company with written assurances, in form and substance satisfactory to counsel for the Company, that (i) the proposed disposition does not require registration of the Shares under the Securities Act or under any applicable state securities laws or (ii) all appropriate actions necessary for compliance with the registration requirements of the Securities Act or of any exemption from registration available under the Securities Act (including Rule 144) or applicable state securities laws have been taken; and

(d) Optionee shall have provided the Company with written assurances, in form and substance satisfactory to the Company, that the proposed disposition will not result in the contravention of any transfer restrictions applicable to the Shares pursuant to the provisions of the regulations promulgated under Section 25102(o), Rule 701 or under any other applicable securities laws or adversely affect the Company's ability to rely on the exemption(s) from registration under the Securities Act or under any other applicable securities laws for the grant of the Option, the issuance of Shares thereunder or any other issuance of securities under the Plan.

7.2 Restriction on Transfer. Optionee shall not transfer, assign, grant a lien or security interest in, pledge, hypothecate, encumber or otherwise dispose of any of the Shares which are subject to the Company's Right of First Refusal described below, except as permitted by this Agreement.

7.3 Transferee Obligations. Each person (other than the Company) to whom the Shares are transferred by means of one of the permitted transfers specified in this Agreement must, as a condition precedent to the validity of such transfer, acknowledge in writing to the Company that such person is bound by the provisions of this Agreement and that the transferred Shares are subject to (i) the Company's Right of First Refusal granted hereunder and (ii) the market stand-off provisions of Section 8 below, to the same extent such Shares would be so subject if retained by Optionee.

8. MARKET STANDOFF AGREEMENT. Optionee agrees that, subject to any early release provisions that apply pro rata to stockholders of the Company according to their holdings of Common Stock (determined on an as-converted into Common Stock basis), Optionee will not, if requested by the managing underwriter(s) in the initial underwritten sale of Common Stock of the Company to the public pursuant to a registration statement filed with, and declared effective by, the SEC under the Securities Act (the "***IPO***"), for a period of up to one hundred eighty (180) days following the effective date of the registration statement relating to such IPO, directly or indirectly sell, offer to sell, grant any option for the sale of, or otherwise dispose of any Common Stock or securities convertible into Common Stock, except for: (i) transfers of Shares permitted under Section 9.6 hereof so long as such transferee furnishes to the Company and the managing underwriter their written consent to be bound by this Section 8 as a condition precedent to such transfer; and (ii) sales of any securities to be included in the registration statement for the IPO. For the avoidance of doubt, the provisions of this Section shall only apply to the IPO. The restricted period shall in any event terminate two (2) years after the closing date of the IPO. In order to enforce the foregoing covenant, the Company shall have the right to place restrictive legends on the certificates representing the Shares subject to this Section and to impose stop transfer instructions with respect to the Shares until the end of such period. Optionee further agrees to enter into any agreement reasonably required by the underwriters to implement the foregoing restrictions

on transfer. For the avoidance of doubt, the foregoing provisions of this Section shall not apply to any registration of securities of the Company (a) under an employee benefit plan or (b) in a merger, consolidation, business combination or similar transaction.

9. COMPANY'S RIGHT OF FIRST REFUSAL. Before any Shares held by Optionee or any transferee of such Shares (either sometimes referred to herein as the "***Holder"***) may be sold or otherwise transferred (including, without limitation, a transfer by gift or operation of law), the Company and/or its assignee(s) will have a right of first refusal to purchase the Shares to be sold or transferred (the "***Offered Shares"***) on the terms and conditions set forth in this Section (the "***Right of First Refusal"***).

9.1 Notice of Proposed Transfer. The Holder of the Offered Shares will deliver to the Company a written notice (the "***Notice"***) stating: (i) the Holder's bona fide intention to sell or otherwise transfer the Offered Shares; (ii) the name and address of each proposed purchaser or other transferee (the "***Proposed Transferee"***); (iii) the number of Offered Shares to be transferred to each Proposed Transferee; (iv) the bona fide cash price or other consideration for which the Holder proposes to transfer the Offered Shares (the "***Offered Price"***); and (v) that the Holder acknowledges this Notice is an offer to sell the Offered Shares to the Company and/or its assignee(s) pursuant to the Company's Right of First Refusal at the Offered Price as provided for in this Agreement.

9.2 Exercise of Right of First Refusal. At any time within thirty (30) days after the date of the Notice, the Company and/or its assignee(s) may, by giving written notice to the Holder, elect to purchase all (or, with the consent of the Holder, less than all) the Offered Shares proposed to be transferred to any one or more of the Proposed Transferees named in the Notice, at the purchase price, determined as specified below.

9.3 Purchase Price. The purchase price for the Offered Shares purchased under this Section will be the Offered Price, *provided* that if the Offered Price consists of no legal consideration (as, for example, in the case of a transfer by gift) then the purchase price will be the fair market value of the Offered Shares as determined in good faith by the Committee. If the Offered Price includes consideration other than cash, then the value of the non-cash consideration, as determined in good faith by the Committee, will conclusively be deemed to be the cash equivalent value of such non-cash consideration.

9.4 Payment. Payment of the purchase price for the Offered Shares will be payable, at the option of the Company and/or its assignee(s) (as applicable), by check or by cancellation of all or a portion of any outstanding purchase money indebtedness owed by the Holder to the Company (or to such assignee, in the case of a purchase of Offered Shares by such assignee) or by any combination thereof. The purchase price will be paid without interest within sixty (60) days after the Company's receipt of the Notice, or, at the option of the Company and/or its assignee(s), in the manner and at the time(s) set forth in the Notice.

9.5 Holder's Right to Transfer. If all of the Offered Shares proposed in the Notice to be transferred to a given Proposed Transferee are not purchased by the Company and/or its assignee(s) as provided in this Section, then the Holder may sell or otherwise transfer such Offered Shares to each Proposed Transferee at the Offered Price or at a higher price, *provided* that (i) such sale or other transfer is consummated within ninety (90) days after the date of the Notice, (ii) any such sale or other transfer is effected in compliance with all applicable securities laws, and (iii) each Proposed Transferee agrees in writing that the provisions of this Section will continue to apply to the Offered Shares in the hands of such Proposed Transferee. If the Offered Shares described in the Notice are not transferred to each Proposed Transferee within such ninety (90) day period, then a new Notice must be given to the Company pursuant to which the Company will again be offered the Right of First Refusal before any Shares held by the Holder may be sold or otherwise transferred.

9.6 Exempt Transfers. Notwithstanding anything to the contrary in this Section, the following transfers of Shares will be exempt from the Right of First Refusal: (i) the transfer of any or all

of the Shares during Optionee's lifetime by gift or on Optionee's death by will or intestacy to any member(s) of Optionee's "Immediate Family" (as defined below) or to a trust for the benefit of Optionee and/or member(s) of Optionee's Immediate Family, *provided* that each transferee or other recipient agrees in a writing satisfactory to the Company that the provisions of this Section will continue to apply to the transferred Shares in the hands of such transferee or other recipient; (ii) any transfer of Shares made pursuant to a statutory merger, statutory consolidation of the Company with or into another corporation or corporations or a conversion of the Company into another form of legal entity (except that the Right of First Refusal will continue to apply thereafter to such Shares, in which case the surviving corporation of such merger or consolidation or the resulting entity of such conversion shall succeed to the rights of the Company under this Section unless the agreement of merger or consolidation or conversion expressly otherwise provides); or (iii) any transfer of Shares pursuant to the winding up and dissolution of the Company. As used herein, the term "***Immediate Family"*** will mean Optionee's spouse, the lineal descendant or antecedent, father, mother, brother or sister, child, adopted child, grandchild or adopted grandchild of Optionee or Optionee's spouse, or the spouse of any of the above or Spousal Equivalent, as defined herein. As used herein, a person is deemed to be a "***Spousal Equivalent"*** provided the following circumstances are true: (i) irrespective of whether or not Optionee and the Spousal Equivalent are the same sex, they are the sole spousal equivalent of the other for the last twelve (12) months, (ii) they intend to remain so indefinitely, (iii) neither are married to anyone else, (iv) both are at least 18 years of age and mentally competent to consent to contract, (v) they are not related by blood to a degree of closeness that which would prohibit legal marriage in the state in which they legally reside, (vi) they are jointly responsible for each other's common welfare and financial obligations, and (vii) they reside together in the same residence for the last twelve (12) months and intend to do so indefinitely.

9.7 Termination of Right of First Refusal. The Right of First Refusal will terminate as to all Shares: (i) on the effective date of the first sale of Common Stock of the Company to the general public pursuant to a registration statement filed with and declared effective by the SEC under the Securities Act (other than a registration statement relating solely to the issuance of Common Stock pursuant to a business combination or an employee incentive or benefit plan); (ii) on any transfer or conversion of Shares made pursuant to a statutory merger or statutory consolidation of the Company with or into another corporation or corporations if the common stock of the surviving corporation or any direct or indirect parent corporation thereof is registered under the Exchange Act; or (iii) on any transfer or conversion of Shares made pursuant to a statutory conversion of the Company into another form of legal entity if the common equity (or comparable equity security) of entity resulting from such conversion is registered under the Exchange Act.

9.8 Encumbrances on Shares. Optionee may grant a lien or security interest in, or pledge, hypothecate or encumber Shares only if each party to whom such lien or security interest is granted, or to whom such pledge, hypothecation or other encumbrance is made, agrees in a writing satisfactory to the Company that: (i) such lien, security interest, pledge, hypothecation or encumbrance will not adversely affect or impair the Right of First Refusal or the rights of the Company and/or its assignee(s) with respect thereto and will not apply to such Shares after they are acquired by the Company and/or its assignees under this Section; and (ii) the provisions of this Agreement will continue to apply to such Shares in the hands of such party and any transferee of such party.

10. RIGHTS AS A STOCKHOLDER. Optionee shall not have any of the rights of a stockholder with respect to any Shares unless and until such Shares are issued to Optionee. Subject to the terms and conditions of this Agreement, Optionee will have all of the rights of a stockholder of the Company with respect to the Shares from and after the date that Shares are issued to Optionee pursuant to, and in accordance with, the terms of the Exercise Agreement until such time as Optionee disposes of the Shares or the Company and/or its assignee(s) exercise(s) the Right of First Refusal. Upon an exercise of the Right of First Refusal, Optionee will have no further rights as a holder of the Shares so purchased upon such exercise, other than the right to receive payment for the Shares so purchased in accordance with the provisions of this Agreement, and Optionee will promptly surrender the stock certificate(s) evidencing the Shares so purchased to the Company for transfer or cancellation.

11. ESCROW. As security for Optionee's faithful performance of this Agreement, Optionee agrees, immediately upon receipt of the stock certificate(s) evidencing the Shares, to deliver such certificate(s) to the Secretary of the Company or other designee of the Company (the "***Escrow Holder***"), who is hereby appointed to hold such certificate(s) in escrow and to take all such actions and to effectuate all such transfers and/or releases of such Shares as are in accordance with the terms of this Agreement. Optionee and the Company agree that Escrow Holder will not be liable to any party to this Agreement (or to any other party) for any actions or omissions unless Escrow Holder is grossly negligent or intentionally fraudulent in carrying out the duties of Escrow Holder under this Agreement. Escrow Holder may rely upon any letter, notice or other document executed with any signature purported to be genuine and may rely on the advice of counsel and obey any order of any court with respect to the transactions contemplated by this Agreement and will not be liable for any act or omission taken by Escrow Holder in good faith reliance on such documents, the advice of counsel or a court order. The Shares will be released from escrow upon termination of the Right of First Refusal.

12. RESTRICTIVE LEGENDS AND STOP-TRANSFER ORDERS.

12.1 Legends. Optionee understands and agrees that the Company will place the legends set forth below or similar legends on any stock certificate(s) evidencing the Shares, together with any other legends that may be required by state or U.S. Federal securities laws, the Company's Certificate of Incorporation or Bylaws, any other agreement between Optionee and the Company, or any agreement between Optionee and any third party (and any other legend(s) that the Company may become obligated to place on the stock certificate(s) evidencing the Shares under the terms of any agreement to which the Company is or may become bound or obligated):

(a) THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR UNDER THE SECURITIES LAWS OF CERTAIN STATES. THESE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE AND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS, PURSUANT TO REGISTRATION OR EXEMPTION THEREFROM. INVESTORS SHOULD BE AWARE THAT THEY MAY BE REQUIRED TO BEAR THE FINANCIAL RISKS OF THIS INVESTMENT FOR AN INDEFINITE PERIOD OF TIME. THE ISSUER OF THESE SECURITIES MAY REQUIRE AN OPINION OF COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER TO THE EFFECT THAT ANY PROPOSED TRANSFER OR RESALE IS IN COMPLIANCE WITH THE SECURITIES ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

(b) THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO CERTAIN RESTRICTIONS ON RESALE AND TRANSFER, INCLUDING THE RIGHT OF FIRST REFUSAL HELD BY THE ISSUER AND/OR ITS ASSIGNEE(S) AS SET FORTH IN A STOCK OPTION AGREEMENT BETWEEN THE ISSUER AND THE ORIGINAL HOLDER OF THESE SHARES, A COPY OF WHICH MAY BE OBTAINED AT THE PRINCIPAL OFFICE OF THE ISSUER. SUCH SALE AND TRANSFER RESTRICTIONS, INCLUDING THE RIGHT OF FIRST REFUSAL, ARE BINDING ON TRANSFEREES OF THESE SHARES.

(c) THE SHARES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO A MARKET STANDOFF RESTRICTION AS SET FORTH IN A CERTAIN STOCK OPTION AGREEMENT BETWEEN THE ISSUER AND THE ORIGINAL HOLDER OF THESE SHARES, A COPY OF WHICH MAY BE OBTAINED AT THE PRINCIPAL OFFICE OF THE ISSUER. AS A RESULT OF SUCH AGREEMENT, THESE SHARES MAY NOT BE TRADED PRIOR TO 180 DAYS AFTER THE EFFECTIVE DATE OF CERTAIN PUBLIC OFFERINGS OF THE COMMON STOCK OF THE ISSUER HEREOF. SUCH RESTRICTION IS BINDING ON TRANSFEREES OF THESE SHARES.

12.2 Stop-Transfer Instructions. Optionee agrees that, to ensure compliance with the restrictions imposed by this Agreement, the Company may issue appropriate "stop-transfer" instructions to its transfer agent, if any, and if the Company transfers its own securities, it may make appropriate notations to the same effect in its own records.

12.3 Refusal to Transfer. The Company will not be required (i) to transfer on its books any Shares that have been sold or otherwise transferred in violation of any of the provisions of this Agreement or (ii) to treat as owner of such Shares, or to accord the right to vote or pay dividends to any purchaser or other transferee to whom such Shares have been so transferred.

13. CERTAIN TAX CONSEQUENCES. Set forth below is a brief summary as of the Effective Date of the Plan of some of the federal tax consequences of exercise of the Option and disposition of the Shares. THIS SUMMARY IS NECESSARILY INCOMPLETE, AND THE TAX LAWS AND REGULATIONS ARE SUBJECT TO CHANGE. OPTIONEE SHOULD CONSULT A TAX ADVISER BEFORE EXERCISING THE OPTION OR DISPOSING OF THE SHARES.

13.1 Exercise of ISO. If the Option qualifies as an ISO, there will be no regular federal income tax liability upon the exercise of the Option, although the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price will be treated as a tax preference item for federal alternative minimum tax purposes and may subject Optionee to the alternative minimum tax in the year of exercise.

13.2 Exercise of Nonqualified Stock Option. If the Option does not qualify as an ISO, there may be a regular federal income tax liability upon the exercise of the Option. Optionee will be treated as having received compensation income (taxable at ordinary income tax rates) equal to the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price. If Optionee is a current or former employee of the Company, the Company may be required to withhold from Optionee's compensation or collect from Optionee and pay to the applicable taxing authorities an amount equal to a percentage of this compensation income at the time of exercise.

13.3 Disposition of Shares. The following tax consequences may apply upon disposition of the Shares.

(a) Incentive Stock Options. If the Shares are held for more than twelve (12) months after the date of purchase of the Shares pursuant to the exercise of an ISO and are disposed of more than two (2) years after the Date of Grant, any gain realized on disposition of the Shares will be treated as long term capital gain for federal income tax purposes. If Shares purchased under an ISO are disposed of within the applicable one (1) year or two (2) year period, any gain realized on such disposition will be treated as compensation income (taxable at ordinary income rates in the year of the disposition) to the extent of the excess, if any, of the Fair Market Value of the Shares on the date of exercise over the Exercise Price.

(b) Nonqualified Stock Options. If the Shares are held for more than twelve (12) months after the date of purchase of the Shares pursuant to the exercise of an NQSO, any gain realized on disposition of the Shares will be treated as long term capital gain.

14. GENERAL PROVISIONS.

14.1 Interpretation. Any dispute regarding the interpretation of this Agreement shall be submitted by Optionee or the Company to the Committee for review. The resolution of such a dispute by the Committee shall be final and binding on the Company and Optionee.

14.2 Entire Agreement. The Plan, the Grant Notice and the Exercise Agreement are each incorporated herein by reference. This Agreement, the Grant Notice, the Plan and the Exercise

Agreement constitute the entire agreement of the parties with respect to the subject matter hereof and supersede all prior undertakings and agreements with respect to such subject matter.

15. NOTICES. Any and all notices required or permitted to be given to a party pursuant to the provisions of this Agreement will be in writing and will be effective and deemed to provide such party sufficient notice under this Agreement on the earliest of the following: (i) at the time of personal delivery, if delivery is in person; (ii) at the time an electronic confirmation of receipt is received, if delivery is by email; (iii) at the time of transmission by facsimile, addressed to the other party at its facsimile number specified herein (or hereafter modified by subsequent notice to the parties hereto), with confirmation of receipt made by both telephone and printed confirmation sheet verifying successful transmission of the facsimile; (iv) one (1) business day after deposit with an express overnight courier for United States deliveries, or two (2) business days after such deposit for deliveries outside of the United States, with proof of delivery from the courier requested; or (v) three (3) business days after deposit in the United States mail by certified mail (return receipt requested) for United States deliveries. Any notice for delivery outside the United States will be sent by email, facsimile or by express courier. Any notice not delivered personally or by email will be sent with postage and/or other charges prepaid and properly addressed to Optionee at the last known address or facsimile number on the books of the Company, or at such other address or facsimile number as such other party may designate by one of the indicated means of notice herein to the other parties hereto or, in the case of the Company, to it at its principal place of business. Notices to the Company will be marked "Attention: Chief Financial Officer." Notices by facsimile shall be machine verified as received.

16. SUCCESSORS AND ASSIGNS. The Company may assign any of its rights under this Agreement including its rights to purchase Shares under the Right of First Refusal. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth herein, this Agreement shall be binding upon Optionee and Optionee's heirs, executors, administrators, legal representatives, successors and assigns.

17. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the internal laws of the State of Delaware as such laws are applied to agreements between Delaware residents entered into and to be performed entirely within Delaware. If any provision of this Agreement is determined by a court of law to be illegal or unenforceable, then such provision will be enforced to the maximum extent possible and the other provisions will remain fully effective and enforceable.

18. FURTHER ASSURANCES. The parties agree to execute such further documents and instruments and to take such further actions as may be reasonably necessary to carry out the purposes and intent of this Agreement.

19. TITLES AND HEADINGS. The titles, captions and headings of this Agreement are included for ease of reference only and will be disregarded in interpreting or construing this Agreement. Unless otherwise specifically stated, all references herein to "sections" and "exhibits" will mean "sections" and "exhibits" to this Agreement.

20. COUNTERPARTS. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered will be deemed an original, and all of which together shall constitute one and the same agreement.

21. SEVERABILITY. If any provision of this Agreement is determined by any court or arbitrator of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such provision will be enforced to the maximum extent possible given the intent of the parties hereto. If such clause or provision cannot be so enforced, such provision shall be stricken from this Agreement and the remainder of this Agreement shall be enforced as if such invalid, illegal or unenforceable clause or provision had (to the extent not enforceable) never been contained in this Agreement. Notwithstanding the forgoing, if the

value of this Agreement based upon the substantial benefit of the bargain for any party is materially impaired, which determination as made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

* * * * *

Attachment: Annex A: Form of Stock Option Exercise Notice and Agreement

ANNEX A

FORM OF STOCK OPTION EXERCISE NOTICE AND AGREEMENT

STOCK OPTION EXERCISE NOTICE AND AGREEMENT

STOKE THERAPEUTICS, INC.

2014 EQUITY INCENTIVE PLAN

NOTE: *You must sign this Notice on Page 3 before submitting it to Stoke Therapeutics, Inc. (the "Company").

OPTIONEE INFORMATION: *Please provide the following information about yourself ("**Optionee**")*:

Name: _____ Social Security Number: _____

Address: _____ Employee Number: _____

_____

OPTION INFORMATION: *Please provide this information on the option being exercised* (*the "**Option**"*):

Grant No.

Date of Grant:

Option Price per Share: $____

Total number of shares of Common Stock of the Company subject to the Option:

Type of Stock Option:

☐ Nonqualified (NQSO)

☐ Incentive (ISO)

EXERCISE INFORMATION:

Number of shares of Common Stock of the Company for which the Option is now being exercised [_____]. (These shares are referred to below as the "***Purchased Shares***.")

Total Exercise Price Being Paid for the Purchased Shares: $_____

Form of payment enclosed ***[check all that apply]***:

☐ Check for $_____, payable to "***Stoke Therapeutics, Inc.***."

☐ Certificate(s) for _____ shares of Common Stock of the Company. These shares will be valued as of the date this notice is received by the Company. ***[Requires Company consent.]***

AGREEMENTS, REPRESENTATIONS AND ACKNOWLEDGMENTS OF OPTIONEE: By signing this Stock Option Exercise Notice and Agreement, Optionee hereby agrees with, and represents to, the Company as follows:

1. **Terms Governing.** I acknowledge and agree with the Company that I am acquiring the Purchased Shares by exercise of this Option subject to all other terms and conditions of the Notice of Stock Option Grant and the Stock Option Agreement that govern the Option, including without limitation the terms of the Company's 2014 Equity Incentive Plan, as it may be amended (the "***Plan***").

2. **Investment Intent; Securities Law Restrictions.** I represent and warrant to the Company that I am acquiring and will hold the Purchased Shares for investment for my account only, and not with a view to, or for resale in connection with, any "distribution" of the Purchased Shares within the meaning of the Securities Act of 1933, as amended (the "***Securities Act***"). I understand that the Purchased Shares have not been registered under the Securities Act by reason of a specific exemption from such

registration requirement and that the Purchased Shares must be held by me indefinitely, unless they are subsequently registered under the Securities Act or I obtain an opinion of counsel (in form and substance satisfactory to the Company and its counsel) that registration is not required. I acknowledge that the Company is under no obligation to register the Purchased Shares under the Securities Act or under any other securities law.

3. **Restrictions on Transfer: Rule 144.** I will not sell, transfer or otherwise dispose of the Purchased Shares in violation of the Securities Act, the Securities Exchange Act of 1934, or the rules promulgated thereunder (including Rule 144 under the Securities Act described below "Rule 144")) or of any other applicable securities laws. I am aware of Rule 144, which permits limited public resales of securities acquired in a non-public offering, subject to satisfaction of certain conditions, which include (without limitation) that: (a) certain current public information about the Company is available; (b) the resale occurs only after the holding period required by Rule 144 has been met; (c) the sale occurs through an unsolicited "broker's transaction"; and (d) the amount of securities being sold during any three-month period does not exceed specified limitations. I understand that the conditions for resale set forth in Rule 144 have not been satisfied and that the Company has no plans to satisfy these conditions in the foreseeable future.

4. **Access to Information; Understanding of Risk in Investment.** I acknowledge that I have received and had access to such information as I consider necessary or appropriate for deciding whether to invest in the Purchased Shares and that I had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the issuance of the Purchased Shares. I am aware that my investment in the Company is a speculative investment that has limited liquidity and is subject to the risk of complete loss. I am able, without impairing my financial condition, to hold the Purchased Shares for an indefinite period and to suffer a complete loss of my investment in the Purchased Shares.

5. **Rights of First Refusal; Market Stand-off.** I acknowledge that the Purchased Shares remain subject to the Company's Right of First Refusal and the market stand-off covenants (sometimes referred to as the "lock-up"), all in accordance with the applicable Notice of Stock Option Grant and the Stock Option Agreement that govern the Option.

6. **Form of Ownership.** I acknowledge that the Company has encouraged me to consult my own adviser to determine the form of ownership of the Purchased Shares that is appropriate for me. In the event that I choose to transfer my Purchased Shares to a trust, I agree to sign a Stock Transfer Agreement. In the event that I choose to transfer my Purchased Shares to a trust that is not an eligible revocable trust, I also acknowledge that the transfer will be treated as a "disposition" for tax purposes. As a result, the favorable ISO tax treatment will be unavailable and other unfavorable tax consequences may occur.

7. **Investigation of Tax Consequences.** I acknowledge that the Company has encouraged me to consult my own adviser to determine the tax consequences of acquiring the Purchased Shares at this time.

8. **Other Tax Matters.** I agree that the Company does not have a duty to design or administer the Plan or its other compensation programs in a manner that minimizes my tax liabilities. I will not make any claim against the Company or its Board, officers or employees related to tax liabilities arising from my options or my other compensation. In particular, I acknowledge that my options (including the Option) are exempt from section 409A of the Internal Revenue Code only if the exercise price per share is at least equal to the fair market value per share of the Common Stock at the time the option was granted by the Board. Since shares of the Common Stock are not traded on an established securities market, the determination of their fair market value was made by the Board and/or by an independent valuation firm retained by the Company. I acknowledge that there is no guarantee in either case that the Internal Revenue Service will agree with the valuation, and I will not make any

claim against the Company or its Board, officers or employees in the event that the Internal Revenue Service asserts that the valuation was too low.

9. **Spouse Consent.** I agree to seek the consent of my spouse to the extent required by the Company to enforce the foregoing.

10. **Tax Withholding.** As a condition of exercising this Option, I agree to make adequate provision for foreign, federal, state or other tax withholding obligations, if any, which arise upon the grant, vesting or exercise of this Option, or disposition of the Purchased Shares, whether by withholding, direct payment to the Company, or otherwise.

The undersigned hereby executes and delivers this Stock Option Exercise Notice and Agreement to agrees to be bound by its terms

SIGNATURE: **DATE:**

Optionee's Name:

[Signature Page to Stock Option Exercise Notice and Agreement]

EXHIBIT 10.6

139 MAIN STREET
CAMBRIDGE, MASSACHUSETTS

LEASE SUMMARY SHEET

Execution Date:	January 2, 2019
Tenant:	Stoke Therapeutics, Inc. a Delaware corporation
Tenant's Mailing Address Prior to Occupancy:	3 Preston Court Suite 102 Bedford, MA 01730
Landlord:	MIT 139 Main Street Leasehold LLC, a Massachusetts limited liability company
Building:	139 Main Street, Cambridge, Massachusetts. The Building consists of approximately 37,575 rentable square feet. The land on which the Building is located (the "**Land**") is more particularly described in Exhibit 1 attached hereto and made a part hereof. The Building and the Land are collectively hereinafter referred to as the "**Property**").
Premises:	Approximately 2,485 rentable square feet of space on the 4th (fourth) floor of the Building, as more particularly shown as hatched, highlighted or outlined on the plan attached hereto as Exhibit 2 and made a part hereof (the "**Lease Plan**"). The Premises shall be measured according to the BOMA Standard Method for Measuring Floor Area in Office Buildings.
Commencement Date:	The earlier of (a) the date on which the Premises are delivered to Tenant with Landlord's Work Substantially Complete (as such terms are defined in the Work Letter attached hereto as Exhibit 5) (targeted to occur on or about March 15, 2019, and (b) the date on which Tenant occupies the Premises for the Permitted Uses.
Expiration Date:	The last day of the third (3rd) Rent Year.[1]
Extension Term(s):	Subject to Section 1.2 below, one (1) extension term of two (2) years.

[1] For the purposes of this Lease, the first "**Rent Year**" shall be defined as the period commencing as of the Commencement Date and ending on the last day of the month in which the first (1st) anniversary of the Commencement Date occurs; provided, however, if the Commencement Date occurs on the first day of a calendar month, then the first Rent Year shall expire on the day immediately preceding the first (1st) anniversary of the Commencement Date. Thereafter, "Rent Year" shall be defined as any subsequent twelve (12) month period during the term of this Lease.

Permitted Uses: Subject to the Legal Requirements (hereinafter defined), general office use and accessory uses in proportions consistent with the design of the Building.

Base Rent:

RENT YEAR	ANNUAL BASE RENT	MONTHLY PAYMENT	$/RSF
1	$ 231,105.00	$ 19,258.75	$ 93.00
2	$ 236,882.63	$ 19,740.22	$ 95.33
3	$ 242,804.69	$ 20,233.72	$ 97.71

Operating Costs and Taxes: See Sections 5.2 and 5.3

Tenant's Share: A fraction, the numerator of which is the number of rentable square feet in the Premises and the denominator of which is the number of rentable square feet in the Building. As of the Execution Date, Tenant's Share is 6.61%.

Tenant's Tax Share: A fraction, the numerator of which is the number of rentable square feet in the Premises and the denominator of which is the number of rentable square feet in the Building recognized by the City of Cambridge as being used for purposes which are not exempt from real estate taxation as of the date on which the assessment is made for the tax year in question. As of the Execution Date, Tenant's Tax Share is 6.61%.

Security Deposit/ Letter of Credit: $57,776.25

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THIS INDENTURE OF LEASE (this "**Lease**") is hereby made and entered into on the Execution Date by and between Landlord and Tenant.

This Lease and all of its terms, covenants, representations, warranties, agreements and conditions are in all respects subject and subordinate to that certain Master Lease Agreement dated as of September 29, 2017 by and between MIT 139 Main Street Fee Owner LLC, as landlord, and Landlord, as tenant (as it may be amended from time to time, the "**Master Lease**"), a redacted copy of which has been delivered to Tenant. Tenant acknowledges notice and full knowledge of all of the terms, covenants and conditions of the Master Lease.

Each reference in this Lease to any of the terms and titles contained in any Exhibit attached to this Lease shall be deemed and construed to incorporate the data stated under that term or title in such Exhibit. All capitalized terms not otherwise defined herein shall have the meanings ascribed to them as set forth in the Lease Summary Sheet which is attached hereto and incorporated herein by reference.

1. LEASE GRANT; TERM; APPURTENANT RIGHTS; EXCLUSIONS

1.1 Lease Grant. Landlord hereby leases to Tenant, and Tenant hereby leases from Landlord, the Premises upon and subject to terms and conditions of this Lease, for a term of years commencing on the Commencement Date and, unless earlier terminated or extended pursuant to the terms hereof, ending on the Expiration Date (the "**Initial Term**"; the Initial Term and the Extension Term, if duly exercised, are hereinafter collectively referred to as the "**Term**"). Once the Commencement Date is determined, Landlord and Tenant shall execute an agreement confirming the Commencement Date and the Expiration Date, in substantially the form attached hereto as Exhibit 3. Tenant's failure to execute and return any such agreement proposed by Landlord, or to provide written objection to the statements contained therein, within ten (10) business days after the date of Tenant's receipt thereof, shall be deemed an approval by Tenant of Landlord's determination of such dates as set forth therein. If Landlord for any reason does not Substantially Complete Landlord's Work and deliver the Premises to Tenant by July 15, 2019 (subject to Landlord's Force Majeure (as hereinafter defined) and any delays caused by Tenant), then Tenant may, at any time thereafter but prior to the date on which Landlord's Work is Substantially Complete, cancel this Lease by giving written notice of such cancellation to Landlord.

1.2 Extension Term.

(a) Provided that the following conditions (the "**Extension Conditions**"), any or all of which may be waived by Landlord in its sole discretion, are satisfied: (i) Tenant, an Affiliate (hereinafter defined) and/or a Successor (hereinafter defined) is/are then occupying one hundred percent (100%) of the Premises; and (ii) there is no Event of Default (hereinafter defined) (1) as of the date of the Extension Notice (hereinafter defined), and (2) at the commencement of the applicable Extension Term (hereinafter defined), Tenant shall have the option to extend the Initial Term for one (1) additional term of two (2) years (the "**Extension Term**"), commencing as of the expiration of the Initial Term. Tenant must exercise such option to extend, if at all, by giving Landlord written notice (the "**Extension Notice**") not earlier than twelve (12) months and no later than nine (9) months prior to the expiration of the then-current term of this Lease, time being of the essence. Notwithstanding the foregoing, Landlord may nullify Tenant's exercise of its option to extend the Term by written notice to Tenant (the "**Nullification Notice**") if (A) on the date Landlord receives the applicable Extension Notice, there is an event which, with the passage of time and/or the giving of notice, would constitute an Event of Default hereunder and (B) Tenant fails to cure such default within the applicable cure period set forth in Section 18.1 after receipt of the Nullification Notice. Upon the satisfaction of the Extension Conditions and the timely giving of the Extension Notice without a subsequent nullification by Landlord, the Initial Term shall be deemed extended upon all of the terms and conditions of this Lease, except that Base Rent during the

Extension Term shall be calculated in accordance with this Section 1.2. If Tenant fails to give a timely Extension Notice, as aforesaid, Tenant shall have no further right to extend the Initial Term. Notwithstanding the fact that Tenant's proper and timely exercise of such option to extend the Initial Term shall be self-executing, the parties shall promptly execute a lease amendment reflecting such Extension Term after Tenant validly exercises its option. The execution of such lease amendment shall not be deemed to waive any of the conditions to Tenant's exercise of its rights under this Section 1.2.

(b) The Base Rent during the first Rent Year of the Extension Term (the "**Extension Term RY1 Base Rent**") shall be determined in accordance with the process described hereafter. Extension Term RY1 Base Rent shall be the greater of (i) one hundred two-and-one-half percent (102.5%) of Base Rent for the last Rent Year of the Initial Term, or (ii) the fair market rental value of the Premises then demised to Tenant as of the commencement of the Extension Term, as determined in accordance with the process described below, for renewals of office space in the East Cambridge/ Kendall Square area of equivalent quality, size, utility and location, with the length of the Extension Term, the credit standing of Tenant and all other relevant factors to be taken into account. Within thirty (30) days after receipt of the Extension Notice, Landlord shall deliver to Tenant written notice of its determination of the Extension Term RY1 Base Rent for the Extension Term. Tenant shall, within fifteen (15) days after receipt of such notice, notify Landlord in writing whether Tenant accepts or rejects Landlord's determination of the Extension Term RY1 Base Rent ("**Tenant's Response Notice**"). If Tenant fails timely to deliver Tenant's Response Notice, Landlord's determination of the Extension Term RY1 Base Rent shall be binding on Tenant.

(c) If and only if Tenant's Response Notice is timely delivered to Landlord and indicates both that Tenant rejects Landlord's determination of the Extension Term RY1 Base Rent and desires to submit the matter to the determination process described in this Section 1.2(c) (the "**Determination Process**"), then the Extension Term RY1 Base Rent shall be determined in accordance with the procedure set forth in this Section 1.2(c). In such event, within ten (10) days after receipt by Landlord of Tenant's Response Notice indicating Tenant's desire to submit the determination of the Extension Term RY1 Base Rent to the Determination Process, Tenant and Landlord shall each notify the other, in writing, of their respective selections of an appraiser (respectively, "**Landlord's Appraiser**" and "**Tenant's Appraiser**"). Landlord's Appraiser and Tenant's Appraiser shall then jointly select a third appraiser (the "**Third Appraiser**") within ten (10) days of their appointment. All of the appraisers selected shall be individuals with at least ten (10) consecutive years' commercial appraisal experience in the area in which the Premises are located, shall be members of the Appraisal Institute (M.A.I.), and, in the case of the Third Appraiser, shall not have acted in any capacity for either Landlord or Tenant within five (5) years of his or her selection. The three appraisers shall determine the Extension Term RY1 Base Rent in accordance with the requirements and criteria set forth in Section 1.2(b) above, employing the method commonly known as *Baseball Arbitration*, whereby Landlord's Appraiser and Tenant's Appraiser each sets forth its determination of the Extension Term RY1 Base Rent as defined above, and the Third Appraiser must select one or the other (it being understood that the Third Appraiser shall be expressly prohibited from selecting a compromise figure). Landlord's Appraiser and Tenant's Appraiser shall deliver their determinations of the Extension Term RY1 Base Rent to the Third Appraiser within five (5) days of the appointment of the Third Appraiser and the Third Appraiser shall render his or her decision within ten (10) days after receipt of both of the other two determinations of the Extension Term RY1 Base Rent. The Third Appraiser's decision shall be binding on both Landlord and Tenant. Each party shall bear the cost of its own appraiser and the cost of the Third Appraiser shall be paid by the party whose determination is not selected.

(d) Commencing on the first day of the second Rent Year of the Extension Term, Base Rent shall increase annually by three percent (3%), effective as of the first day of each Rent Year.

1.3 [Intentionally Omitted]

1.4 Appurtenant Rights.

(a) Common Areas. Subject to the terms of this Lease and the Rules and Regulations (hereinafter defined), Tenant shall have, as appurtenant to the Premises, rights to use in common with others entitled thereto the areas designated from time to time for the common use of tenants of the Property (such areas are hereinafter referred to as the "**Common Areas**"). The Common Areas include: (i) the common lobby(ies), loading docks, hallways, elevators and stairways of the Building, (ii) common walkways necessary for access to the Building, (iii) if the Premises include less than the entire rentable area of any floor, the common restrooms and other common facilities of such floor; (iv) roof terrace located on the fifth (5^{th}) floor of the Building; and (v) other areas designated by Landlord from time to time for the common use of tenants of the Property, including any conference, fitness or kitchenette facilities; and no other appurtenant rights or easements.

(b) Parking. During the Term, commencing on the Commencement Date, Landlord shall, subject to the terms hereof, provide to Tenant one (1) parking pass (the "**Parking Pass**") for the parking area serving the Building (the "**Parking Area**") for the parking of passenger vehicles in unreserved stalls in the Parking Area by Tenant's employees and the employees of any transferee pursuant to a Transfer permitted by Article 11 of this Lease ("**Permitted Pass Holders**"). Tenant shall not sublet, assign, encumber, pledge or otherwise transfer the Parking Pass except in connection with a Transfer permitted by Article 11 of this Lease. During the Term, commencing on the Commencement Date, Tenant shall pay Landlord (or at Landlord's election, directly to the parking operator, if any) for the Parking Pass at the then-current prevailing rate, as such rate may vary from time to time. As of the Execution Date, the monthly charge for parking is Three Hundred Fifty Dollars ($350) per Parking Pass per month. If, for any reason, Tenant shall fail timely to pay the charge for said Parking Pass under this Section 1.4(b), upon the second (2nd) occurrence of such default continuing for five (5) days after written notice therefor, Landlord shall have the right to revoke Tenant's right to the Parking Pass, and Landlord may allocate such Parking Pass for use by others free and clear of Tenant's rights under this Section 1.4(b). Use of the Parking Area and the Parking Pass will be subject to such reasonable rules and regulations as may be in effect from time to time (including Landlord's right, without additional charge to Tenant above the prevailing rate for the Parking Pass, to institute a valet or attendant-managed parking system). Tenant shall provide Landlord and/or the operator of the Parking Area with such information as may be reasonably requested, for the Parking Pass. Except to the extent prohibited by Legal Requirements, neither Landlord nor the operator of the Parking Areas assumes any responsibility whatsoever for loss or damage due to casualty or theft or otherwise to any automobile or to any personal property therein accessing or using the Parking Area, howsoever caused, and Tenant agrees to notify each Permitted Pass Holder of such limitation of liability. No bailment is intended or shall be created by the provision of, or use of, the parking privileges described herein. Notwithstanding anything to the contrary contained herein, Landlord shall have the right to relocate the parking privileges from time to time to parking areas at other properties owned, leased or controlled by Landlord or its affiliates so long as such relocated parking areas are no more than 1,000 feet from the Building. Any such relocated parking area(s) shall be deemed the "Parking Area" for purposes of this Lease

1.5 Tenant's Access.

(a) From and after the Commencement Date and until the end of the Term, Tenant shall have access to the Premises (and Permitted Pass Holders shall have access to the Parking Area) twenty-four (24) hours a day, seven (7) days a week, subject to Legal Requirements, the Rules and Regulations, the terms of this Lease, Landlord's Force Majeure (hereinafter defined) and matters of record. As used in this Lease, the term **"Landlord's Force Majeure"** shall mean delays due to riots, acts of God, war, acts of terrorism, governmental regulation, unusual scarcity of or inability to obtain labor or materials, labor difficulties, casualty or any other causes reasonably beyond Landlord's control.

(b) Subject to Article 9 below, Tenant shall have the right to access the Premises, at Tenant's sole risk, at times reasonably approved by Landlord prior to the Commencement Date for purposes reasonably related to the installation of Tenant's wiring and cabling and the installation of Tenant's furniture, personal property and equipment, provided such access does not interfere with the preparation for or performance of Landlord's Work (as defined in Exhibit 5). Tenant shall, prior to the first entry to the Premises pursuant to this Section 1.5(b), provide Landlord with certificates of insurance evidencing that the insurance required in Article 12 hereof is in full force and effect and covering any person or entity entering the Building. Tenant shall defend, indemnify and hold the Landlord Parties (hereinafter defined) harmless from and against any and all Claims (hereinafter defined) for injury to persons or property resulting from or relating to Tenant's access to and use of the Premises prior to the Commencement Date as provided under this Section 1.5(b). Tenant shall coordinate any access to the Premises prior to the Commencement Date with Landlord's property manager.

1.6 Exclusions. The following are expressly excluded from the Premises and reserved to Landlord: all the perimeter walls of the Premises (except the inner surfaces thereof), the Common Areas, and any space in or adjacent to the Premises used for shafts, stacks, pipes, conduits, wires and appurtenant fixtures, fan rooms, ducts, electric or other utilities, sinks or other Building facilities, and the use of all of the foregoing, except as expressly permitted pursuant to Section 1.4(a) above.

2. RIGHTS RESERVED TO LANDLORD

2.1 Additions and Alterations. Landlord reserves the right, at any time and from time to time, to make such changes, alterations, additions, improvements, repairs, replacements or testing in or to the Property (including the Premises but, with respect to the Premises, only for purposes of repairs, maintenance, replacements and the exercise of any other rights reserved to Landlord herein) and the fixtures and equipment therein, as well as in or to the street entrances and/or the Common Areas and/or the Parking Areas, as it may deem necessary or desirable. Landlord expressly reserves the right to temporarily close all, or any portion, of the Common Areas or the Parking Areas for the purpose of testing or making repairs or changes thereto. Notwithstanding the immediately foregoing sentence, Landlord further expressly reserves the right, at any time and from time to time, to alter, modify or close (temporarily or permanently) those Common Areas that consist of any conference, fitness or kitchenette facilities, including converting any such Common Areas to rentable premises. Landlord shall use reasonable efforts to minimize interference with Tenant's use or occupancy of the Premises in connection with any such temporary closure of the Common Areas or Parking Areas by Landlord.

2.2 Additions to the Property.

(a) Landlord may, at any time and from time to time, (i) construct additional improvements and related site improvements (collectively, "**Future Development**") in all or any part of the Property, (ii) change the location or arrangement of (A) any improvement outside the Building in or on the Property and/or (B) all or any part of the Common Areas, and/or (iii) add or deduct any land to or from the Property; provided that there shall be no material increase in Tenant's obligations under this Lease in connection with the exercise of the foregoing reserved rights.

2.3 Landlord's Access. Subject to the terms hereof, Tenant shall (a) upon reasonable advance notice, which may be oral (except that no notice shall be required in emergency situations), permit Landlord and any holder of a Mortgage (hereinafter defined) (each such holder, a "**Mortgagee**"), and their respective agents, representatives, employees and contractors, to have access to the Premises at

all reasonable hours for the purposes of inspection, making repairs, replacements or improvements in or to the Premises or the Building or equipment therein (including sanitary, electrical, heating, air conditioning or other systems), complying with all applicable laws, ordinances, rules, regulations, statutes, by-laws, court decisions and orders and requirements of all public authorities (collectively, "**Legal Requirements**"), or exercising any right reserved to Landlord under this Lease (including the right to take upon or through, or to keep and store within the Premises all necessary materials, tools and equipment); (b) permit Landlord and its agents and employees, at reasonable times, upon reasonable advance notice, to show the Premises during normal business hours (i.e., Monday—Friday 8:00 AM – 6:00 PM, Saturday 9:00 AM – 1:00 PM, excluding holidays) to any prospective Mortgagee or purchaser of the Building and/or the Property or of the interest of Landlord therein, and, during the last twelve (12) months of the Term, or at any time after the occurrence of an Event of Default, prospective tenants; (c) upon reasonable prior written notice from Landlord, permit Landlord and its agents, at Landlord's sole cost and expense, to perform environmental audits, environmental site investigations and environmental site assessments ("**Site Assessments**") in, on, under and at the Premises and the Land, it being understood that Landlord shall repair any damage arising as a result of the Site Assessments, and such Site Assessments may include both above and below the ground testing and such other tests as may be necessary or appropriate to conduct the Site Assessments; and (d) in case any excavation shall be made for building or improvements or for any other purpose upon the land adjacent to or near the Premises, afford without charge to Landlord, or the persons or entities causing or making such excavation, license to enter upon the Premises for the purpose of doing such work as Landlord or such persons or entities shall deem necessary to preserve the Building from injury, and to protect the Building by proper securing of foundations. In addition, to the extent that it is necessary to enter the Premises in order to access any area that serves any portion of the Building outside the Premises, then Tenant shall, upon as much advance notice as is practical under the circumstances, and in any event at least twenty-four (24) hours' prior written notice (except that no notice shall be required in emergency situations), permit contractors engaged by other occupants of the Building to pass through the Premises in order to access such areas but only if accompanied by a representative of Landlord. The parties agree and acknowledge that, despite reasonable and customary precautions (which Landlord agrees it shall exercise), any property or equipment in the Premises may nevertheless be damaged in the course of performing Landlord's obligations. Accordingly, Tenant shall take reasonable protective precautions with its property and equipment.

2.4 Pipes, Ducts and Conduits. Tenant shall permit Landlord to erect, use, maintain and relocate pipes, ducts and conduits in and through the Premises, provided the same do not materially reduce the floor area or materially adversely affect the appearance thereof.

2.5 Minimize Interference. Except in the event of an emergency, Landlord shall use commercially reasonable efforts, consistent with accepted construction practice when applicable, to minimize any materially adverse interference with Tenant's use and occupancy of, the Premises as a result of the exercise of Landlord's rights under Sections 2.1-2.4 above. Tenant agrees to cooperate with Landlord as reasonably necessary in connection with the exercise of Landlord's rights under this Article 2. Subject to Landlord's obligations under this Section 2.5, Tenant further agrees that dust, noise, vibration, closures of Common Areas, or other inconvenience or annoyance resulting from the exercise of Landlord's rights under this Article 2 shall not be deemed to be a breach of Landlord's obligations under the Lease.

2.6 Construction in Vicinity. Tenant acknowledges that (a) Landlord and/or its affiliates ("**Neighboring Owners**") own several properties in the vicinity of the Building, (b) during the Term, the Neighboring Owners may undertake various construction projects, which may include the construction of new and/or additional buildings (each, a "**Project**," and collectively, the "**Projects**"), and (c) customary construction impacts (taking into account the urban nature of the Property, the proximity of the Building

to the Project site and other relevant factors) may result therefrom. In no event shall Landlord be liable to Tenant for any compensation or reduction of rent or any other damages arising from the Projects and Tenant shall not have the right to terminate the Lease due to the construction of the Projects, nor shall the same give rise to a claim in Tenant's favor that such construction constitutes actual or constructive, total or partial, eviction from the Premises. Notwithstanding any provision in this Lease to the contrary, in no event shall Tenant seek injunctive or any similar relief to stop, delay or modify any Project. Tenant acknowledges and agrees that Landlord has informed Tenant that a Neighboring Owner is currently undertaking a Project at One Broadway, Cambridge, Massachusetts, which is adjacent to the Property, and Tenant has elected to proceed with entering into this Lease with full knowledge of the existence of such Project.

3. CONDITION OF PREMISES; CONSTRUCTION. On the Commencement Date, Landlord shall deliver the Premises to Tenant with the Variable Air Volume HVAC system and fire alarm and fire protection systems serving the Premises in good working order and with Landlord's Work Substantially Complete. Subject to the immediately foregoing sentence, Tenant acknowledges and agrees that Tenant is leasing the Premises in their "**AS IS**," "**WHERE IS**" condition and with all faults on the Commencement Date, without representations or warranties, express or implied, in fact or by law, of any kind, and without recourse to Landlord.

4. USE OF PREMISES

4.1 Permitted Uses. During the Term, Tenant shall use the Premises only for the Permitted Uses and for no other purposes. Service and utility areas (whether or not a part of the Premises) shall be used only for the particular purpose for which they are designed.

4.2 Prohibited Uses.

(a) Notwithstanding any other provision of this Lease, Tenant shall not use the Premises or the Building, or any part thereof, or suffer or permit the use or occupancy of the Premises or the Building or any part thereof by any of the Tenant Parties (hereinafter defined) (i) in a manner which would violate any of the covenants, agreements, terms, provisions and conditions of this Lease or otherwise applicable to or binding upon the Premises; (ii) in a manner which, in the reasonable judgment of Landlord (taking into account the Building for office use and the Permitted Uses) shall (a) impair the appearance or reputation of the Building; (b) impair, interfere with or otherwise diminish the quality of any of the Building services or the proper and economic heating, cleaning, ventilating, air conditioning or other servicing of the Building or Premises, or the use of any of the Common Areas; (c) occasion discomfort, inconvenience or annoyance in any material respect, or cause any injury or damage to any occupants of the Premises or other tenants or occupants of the Building or their property; or (d) cause harmful air emissions or any unusual or other objectionable odors, noises or emissions to emanate from the Premises; (iii) in a manner which shall increase such insurance rates on the Building or on property located therein over that applicable when Tenant first took occupancy of the Premises hereunder; or (vii) in violation of any exclusive use granted to any other tenant in the Building.

(b) With respect to the use and occupancy of the Premises and the Common Areas, Tenant will not: (i) place or maintain any signage (except as may be permitted by Article 10 below), Trash (hereinafter defined) or other articles in any vestibule or entry of the Premises, on the footwalks or corridors adjacent thereto or elsewhere on the exterior of the Premises, nor obstruct any driveway, corridor, footwalk, parking area, mall or any other Common Areas; (ii) permit undue accumulations of or burn garbage, trash, rubbish or other refuse (collectively, "**Trash**") within or outside of the Premises; (iii) permit the parking of vehicles so as to interfere with the use of any driveway, corridor, footwalk, parking area, or other Common Areas; (iv) receive or ship articles of any kind outside of those areas reasonably

designated by Landlord; (v) conduct or permit to be conducted any auction, going out of business sale, bankruptcy sale (unless directed by court order), or other similar type sale in or connected with the Premises; (vi) use the name of Landlord, or any of Landlord's affiliates or subsidiaries in any publicity, promotion, press release, advertising, printed, electronic or display materials without Landlord's prior written consent (which may be withheld in Landlord's sole discretion); (vii) permit any animals other than service animals in the Building; or (viii) except in connection with Alterations (hereinafter defined) approved by Landlord, cause or permit any hole to be drilled or made in any part of the Building.

5. RENT; ADDITIONAL RENT

5.1 Base Rent. During the Term, Tenant shall pay to Landlord Base Rent in equal monthly installments, in advance and without demand on the first day of each month for and with respect to such month. Unless otherwise expressly provided herein, the payment of Base Rent and additional rent and other charges reserved and covenanted to be paid under this Lease with respect to the Premises (collectively, "**Rent**") shall commence on the Commencement Date and shall be prorated for any partial months. Base Rent for the first (1st) month of the Term shall be due simultaneously with Tenant's execution and delivery of this Lease to Landlord. Rent shall be payable to Landlord or, if Landlord shall so direct in writing, to Landlord's agent or nominee, in lawful money of the United States.

5.2 Operating Costs.

(a) **Payment of Operating Costs**. Tenant shall pay to Landlord, as additional rent, Tenant's Share of Operating Costs (as defined in Exhibit 6 attached hereto). Landlord may make a good faith estimate of the Operating Costs for any fiscal year (wholly or partially) occurring during the Term, and Tenant shall pay to Landlord, on the first (1st) day of each calendar month, an amount equal to Tenant's Share of the Operating Costs for such fiscal year and/or part thereof divided by the number of months therein. Landlord may estimate and re-estimate Tenant's Share of the Operating Costs and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Tenant's Share of the Operating Costs shall be appropriately adjusted in accordance with the estimations so that, by the end of the fiscal year in question, Tenant shall have paid all of Tenant's Share of the Operating Costs as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when the actual Operating Costs are available for each fiscal year.

(b) **Annual Reconciliation**. Landlord shall, within one hundred twenty (120) days after the end of each fiscal year, deliver to Tenant a reasonably detailed statement of the actual amount of Operating Costs for such fiscal year ("**Year End Statement**"). Failure of Landlord to provide the Year End Statement within the time prescribed shall not relieve Tenant from its obligations hereunder. If the total of such monthly remittances on account of any fiscal year is greater than Tenant's Share of the Operating Costs actually incurred for such fiscal year, then, provided there is no Event of Default nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Tenant may credit the difference against the next installment of additional rent on account of Operating Costs due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord (it being understood and agreed that if Tenant cures any default prior to the expiration of the notice and/or cure periods set forth in Section 18.1 below, Tenant shall then be entitled to take such credit). If the total of such remittances is less than Tenant's Share of the Operating Costs actually incurred for such fiscal year, Tenant shall pay the difference to Landlord, as additional rent hereunder, within ten (10) days of Tenant's receipt of an invoice therefor. Landlord's estimate of the Operating Costs for the next fiscal year shall be based upon the Operating Costs actually incurred for the prior fiscal year as reflected in the Year-End Statement plus a reasonable adjustment based upon estimated increases in Operating Costs.

(c) **Part Years**. If the Commencement Date or the Expiration Date occurs in the middle of a fiscal year, Tenant shall be liable for only that portion of the Operating Costs with respect to such fiscal year within the Term.

(d) **Gross-Up**. If, during any fiscal year, less than 95% of the Building is occupied by tenants or if Landlord was not supplying at least 95% of tenants with the services being supplied to Tenant hereunder, actual Operating Costs incurred shall be reasonably extrapolated by Landlord on an item-by-item basis to the reasonable Operating Costs that would have been incurred if the Building was 95% occupied and such services were being supplied to 95% of tenants, and such extrapolated Operating Costs shall, for all purposes hereof, be deemed to be the Operating Costs for such fiscal year.

5.3 Taxes.

(a) **Payment of Taxes**. Tenant shall pay to Landlord, as additional rent, Tenant's Tax Share of Taxes (as defined in Exhibit 7 attached hereto). Landlord may make a good faith estimate of the Taxes to be due by Tenant for any Tax Period (as defined in Exhibit 7 attached hereto) or part thereof during the Term, and Tenant shall pay to Landlord, on the Commencement Date and on the first (1st) day of each calendar month thereafter, an amount equal to Tenant's Tax Share of Taxes for such Tax Period or part thereof divided by the number of months therein. Landlord may estimate and re-estimate Tenant's Tax Share of Taxes and deliver a copy of the estimate or re-estimate to Tenant. Thereafter, the monthly installments of Tenant's Tax Share of the Taxes shall be appropriately adjusted in accordance with the estimations so that, by the end of the Tax Period in question, Tenant shall have paid all of Tenant's Tax Share of the Taxes as estimated by Landlord. Any amounts paid based on such an estimate shall be subject to adjustment as herein provided when actual Taxes are available for each Tax Period. If the total of such monthly remittances is greater than Tenant's Tax Share of Taxes actually due for such Tax Period, then, provided no Event of Default has occurred nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Tenant may credit the difference against the next installment of additional rent on account of Taxes due hereunder, except that if such difference is determined after the end of the Term, Landlord shall refund such difference to Tenant within thirty (30) days after such determination to the extent that such difference exceeds any amounts then due from Tenant to Landlord (it being understood and agreed that if Tenant cures any default prior to the expiration of the notice and/or cure periods set forth in Section 18.1 below, Tenant shall then be entitled to take such credit). If the total of such remittances is less than Tenant's Tax Share of Taxes actually due for such Tax Period, Tenant shall pay the difference to Landlord, as additional rent hereunder, within thirty (30) days of Tenant's receipt of an invoice therefor. Landlord's estimate for the next Tax Period shall be based upon the actual Taxes to the Property for the prior Tax Period plus a reasonable adjustment based upon estimated increases in Taxes. In the event that Payments in Lieu of Taxes ("**PILOT**"), instead of or in addition to Taxes, are separately assessed to certain portions of the Property including the Premises, Tenant agrees, except as otherwise expressly provided herein to the contrary, to pay to Landlord, as additional rent, Tenant's Tax Share of the portion of such PILOT attributable to the Premises in the same manner as provided above for the payment of Taxes.

(b) **Effect of Abatements**. Appropriate credit against Taxes or PILOT shall be given for any refund obtained by reason of a reduction in any Taxes by the assessors or the administrative, judicial or other governmental agency responsible therefor after deduction of Landlord's expenditures for reasonable legal fees and for other reasonable expenses incurred in obtaining the Tax or PILOT refund.

(c) **Part Years**. If the Commencement Date or the Expiration Date occurs in the middle of a Tax Period, Tenant shall be liable for only that portion of the Taxes, as the case may be, with respect to such Tax Period within the Term.

5.4 Late Payments.

(a) Any payment of Rent due hereunder not paid when due shall bear interest for each month or fraction thereof from the due date until paid in full at the annual rate of twelve percent (12%), or at any applicable lesser maximum legally permissible rate for debts of this nature (the "**Default Rate**"). Additionally, for any payment of Rent due hereunder not paid when due, Tenant shall pay to Landlord an administrative fee of $250. Acceptance of interest or any partial payment shall not constitute a waiver of Tenant's default with respect to the overdue amount or prevent Landlord from exercising any of the other rights and remedies available to Landlord under this Lease or at law or in equity now or hereafter in effect.

(b) For each Tenant payment check to Landlord that is returned by a bank for any reason, Tenant shall pay a returned check charge equal to the amount as shall be customarily charged by Landlord's bank at the time.

(c) Money paid by Tenant to Landlord shall be applied to Tenant's account in the following order: first, to any unpaid additional rent, including late charges, returned check charges, legal fees and/or court costs chargeable to Tenant hereunder; and then to unpaid Base Rent.

5.5 No Offset; Independent Covenants; Waiver. Rent shall be paid without notice or demand, and without setoff, counterclaim, defense, abatement, suspension, deferment, reduction or deduction, except as expressly provided herein. TENANT WAIVES ALL RIGHTS (I) TO ANY ABATEMENT, SUSPENSION, DEFERMENT, REDUCTION OR DEDUCTION OF OR FROM RENT, AND (II) TO QUIT, TERMINATE OR SURRENDER THIS LEASE OR THE PREMISES OR ANY PART THEREOF, EXCEPT AS EXPRESSLY PROVIDED HEREIN. TENANT HEREBY ACKNOWLEDGES AND AGREES THAT THE OBLIGATIONS OF TENANT UNDER THIS LEASE SHALL BE SEPARATE AND INDEPENDENT COVENANTS AND AGREEMENTS, THAT RENT SHALL CONTINUE TO BE PAYABLE IN ALL EVENTS AND THAT THE OBLIGATIONS OF TENANT HEREUNDER SHALL CONTINUE UNAFFECTED, UNLESS THE REQUIREMENT TO PAY OR PERFORM THE SAME SHALL HAVE BEEN TERMINATED PURSUANT TO AN EXPRESS PROVISION OF THIS LEASE. LANDLORD AND TENANT EACH ACKNOWLEDGES AND AGREES THAT THE INDEPENDENT NATURE OF THE OBLIGATIONS OF TENANT HEREUNDER REPRESENTS FAIR, REASONABLE, AND ACCEPTED COMMERCIAL PRACTICE WITH RESPECT TO THE TYPE OF PROPERTY SUBJECT TO THIS LEASE, AND THAT THIS AGREEMENT IS THE PRODUCT OF FREE AND INFORMED NEGOTIATION DURING WHICH BOTH LANDLORD AND TENANT WERE REPRESENTED BY COUNSEL SKILLED IN NEGOTIATING AND DRAFTING COMMERCIAL LEASES IN MASSACHUSETTS, AND THAT THE ACKNOWLEDGEMENTS AND AGREEMENTS CONTAINED HEREIN ARE MADE WITH FULL KNOWLEDGE OF THE HOLDING IN WESSON V. LEONE ENTERPRISES, INC., 437 MASS. 708 (2002). SUCH ACKNOWLEDGEMENTS, AGREEMENTS AND WAIVERS BY TENANT ARE A MATERIAL INDUCEMENT TO LANDLORD ENTERING INTO THIS LEASE.

5.6 Survival. Any obligations under this Article 5 which shall not have been paid at the expiration or earlier termination of the Term shall survive such expiration or earlier termination and shall be paid when and as the amount of same shall be determined and be due.

6. SECURITY DEPOSIT/ LETTER OF CREDIT

6.1 Amount. Contemporaneously with the execution of this Lease, Tenant shall deliver to Landlord an irrevocable letter of credit which shall (a) be in the amount specified in the Lease Summary Sheet and otherwise in the form attached hereto as Exhibit 8; (b) issued by a FDIC insured financial institution reasonably acceptable to Landlord upon which presentment may be made in Boston, Massachusetts; and (c) be for a term of one (1) year, subject to extension in accordance with the terms hereof (the "**Letter of Credit**"). The Letter of Credit shall be held by Landlord, without liability for interest, as security for the faithful performance by Tenant of all of the terms, covenants and conditions of this Lease by the Tenant to be kept and performed during the Term. In no event shall the Letter of Credit be deemed to be a prepayment of Rent nor shall it be considered a measure of liquidated damages. Unless the Letter of Credit is automatically renewing, at least thirty (30) days prior to the maturity date of the Letter of Credit (or any replacement Letter of Credit), Tenant shall deliver to Landlord a replacement Letter of Credit which shall have a maturity date no earlier than the next anniversary of the Commencement Date or one (1) year from its date of delivery to Landlord, whichever is later. In the event that the Extension Term RY1 Base Rent during any Extension Term is greater than Base Rent during the previous term, the face amount of the Letter of Credit may be proportionately increased at Landlord's discretion.

6.2 Application of Proceeds of Letter of Credit. Upon any default of Tenant under this Lease, or if any proceeding shall be instituted by or against Tenant pursuant to any of the provisions of any Act of Congress or State law relating to bankruptcy, reorganizations, arrangements, compositions or other relief from creditors (and, in the case of any proceeding instituted against it, if Tenant shall fail to have such proceedings dismissed within thirty (30) days) or if Tenant is adjudged bankrupt or insolvent as a result of any such proceeding, or upon the end of the Term if there remains any uncured default of which Tenant shall have received notice, Landlord, in its sole discretion, may draw down all or a part of the Letter of Credit. The balance of any Letter of Credit cash proceeds shall be held in accordance with Section 6.4 below. Should the entire Letter of Credit, or any portion thereof, be drawn down by Landlord, Tenant shall, upon the written demand of Landlord, deliver a replacement Letter of Credit in the amount drawn, and Tenant's failure to do so within ten (10) days after receipt of such written demand shall constitute an additional Event of Default hereunder without further notice or an opportunity to cure. The application of all or any part of the cash proceeds of the Letter of Credit to any obligation or default of Tenant under this Lease shall not deprive Landlord of any other rights or remedies Landlord may have nor shall such application by Landlord constitute a waiver by Landlord.

6.3 Transfer of Letter of Credit. In the event that Landlord transfers its interest in the Premises, Tenant shall upon notice from and at no cost to Landlord, deliver to Landlord an amendment to the Letter of Credit or a replacement Letter of Credit naming Landlord's successor as the beneficiary thereof. If Tenant fails to deliver such amendment or replacement within ten (10) days after written notice from Landlord, Landlord shall have the right to draw down the entire amount of the Letter of Credit and hold the proceeds thereof in accordance with Section 6.4 below.

6.4 Security Deposit. Landlord shall hold the balance of proceeds remaining after a draw on the Letter of Credit (each hereinafter referred to as the "**Security Deposit**") as security for Tenant's performance of all its Lease obligations. After a default of Tenant under this Lease, or upon the end of the Term if there remains any uncured default of which Tenant shall have received notice, Landlord may apply the Security Deposit, or any part thereof, to Landlord's damages without prejudice to any other Landlord remedy. Should Landlord apply all or any portion of the Security Deposit, Tenant shall, upon the written demand of Landlord, deliver cash in the amount applied, and Tenant's failure to do so within ten (10) days after receipt of such written demand shall constitute an additional Event of Default hereunder without further notice or opportunity to cure. Additionally, if Landlord applies all or any portion of the Security Deposit as aforesaid, Tenant shall have the right to deliver a replacement Letter of Credit in the form and amount required hereunder, and upon receipt of such replacement Letter of Credit, Landlord shall return the unapplied Security Deposit to Tenant. Landlord has no obligation to pay interest on the Security Deposit and may co-mingle the Security Deposit with Landlord's funds. If Landlord conveys its interest under this Lease, the Security Deposit, or any part not applied previously, may be turned over to the grantee in which case Tenant shall look solely to the grantee for the proper application and return of the Security Deposit.

6.5 Return of Security Deposit or Letter of Credit. Should Tenant comply with all of such terms, covenants and conditions and promptly pay all sums payable by Tenant to Landlord hereunder, the Security Deposit and/or Letter of Credit or the remaining proceeds therefrom, as applicable, shall be returned to Tenant within ninety (90) days after the end of the Term, less any portion thereof which may have been utilized by Landlord to cure any default or applied to any actual damage suffered by Landlord.

7. UTILITIES, HVAC; WASTE REMOVAL

7.1 Electricity. Commencing on the Commencement Date, Tenant shall pay all charges for electricity furnished to the Premises and/or any equipment exclusively serving the Premises as additional rent, based on reasonable estimates by Landlord.

7.2 Water. Landlord shall provide hot and cold water to the kitchenette area in the Premises, if any. Notwithstanding anything set forth herein to the contrary, the costs of water and sewer for the Building are included in Operating Costs; provided, however, if Tenant uses quantities of water in excess of normal use for the Permitted Uses, Landlord may charge Tenant, as additional rent hereunder, for its share of water and sewer charges for the Building, as reasonably estimated by Landlord, and Tenant shall pay such charges within thirty (30) days of receipt of any invoice. If Landlord charges Tenant for its excessive use of water and sewer, Landlord shall provide Tenant with reasonable back-up documentation regarding the total charges and the method of allocating the charges to Tenant.

7.3 Heat, Ventilating and Air Conditioning. Landlord shall provide to the Premises during normal business hours (as set forth in Section 2.3 above) heating and cooling in accordance with the Landlord/Tenant Responsibilities Matrix attached hereto as Exhibit 5A. Whenever the air conditioning systems are in operation, Tenant agrees to lower and close the blinds or drapes when necessary because of the sun's position, and to cooperate fully with Landlord with regard to, and to abide by all the reasonable regulations and requirements which Landlord may prescribe for the proper functioning and protection of the air conditioning systems. Landlord shall use reasonable efforts, upon no less than one (1) business day's advance written notice from Tenant, to furnish, at Tenant's sole cost and expense, additional heat or air conditioning services to the Premises on days and at times other than as above provided at Landlord's standard rates from time to time. Tenant, at its sole cost and expense, shall be responsible for the installation of, and charges for, any supplemental cooling equipment Tenant may require for any computer server room or any other similar areas in excess of the cooling to be provided by Landlord pursuant to the Landlord/Tenant Responsibilities Matrix attached hereto as Exhibit 5A. The installation of any such supplemental cooling equipment shall be performed by Tenant in accordance with Article 9 of this Lease.

7.4 Other Utilities; Utility Information. Subject to Landlord's reasonable rules and regulations governing the same, Tenant shall obtain and pay, as and when due, for all other utilities and services consumed in and/or furnished to the Premises, together with all taxes, penalties, surcharges and maintenance charges pertaining thereto. Within ten (10) business days after Landlord's request from time to time, Tenant shall provide Landlord with reasonably detailed information regarding Tenant's utility usage in the Premises.

7.5 Interruption or Curtailment of Utilities. When necessary by reason of accident or emergency, or for repairs, alterations, replacements or improvements which in the reasonable judgment of Landlord are desirable or necessary to be made, Landlord reserves the right, upon no less than twenty-four (24) hours' notice except in the event of an emergency, to interrupt, curtail, or stop (i) the furnishing

of hot and/or cold water, (ii) the operation of the plumbing and electric systems, and/or (iii) HVAC services. Landlord shall exercise reasonable diligence to eliminate the cause of any such interruption, curtailment, stoppage or suspension, but there shall be no diminution or abatement of Rent or other compensation due from Landlord to Tenant hereunder, nor shall this Lease be affected or any of Tenant's obligations hereunder reduced, and Landlord shall have no responsibility or liability for any such interruption, curtailment, stoppage, or suspension of services or systems.

7.6 Telecommunications Providers. Notwithstanding anything to the contrary herein or in this Lease contained, Landlord has no obligation to allow any particular telecommunications service provider to have access to the Building or to Premises; provided, however, that Landlord agrees that as of the Commencement Date Landlord will have permitted access to the Building to at least one (1) telecommunications service provider. Landlord may permit access to the Building to additional telecommunications service providers, in Landlord's sole discretion. Tenant is solely responsible for contracting for telecommunications services to the Premises with the telecommunications service provider(s) that serve the Building as aforesaid, and Landlord shall have no liability to Tenant whatsoever for any disruption to, or interference with, telecommunications services to the Premises.

7.7 Trash Removal. Throughout the Term, Tenant shall, at its sole cost and expense keep any Trash in vermin-proof containers within the interior of the Premises until removed. Subject to reimbursement pursuant to Section 5.2, and subject further to Landlord's Force Majeure, Landlord shall furnish a service for the removal of Trash from the Premises. If any Legal Requirements or the trash removal company requires that any substances in the Premises be disposed of separately from ordinary trash, Tenant shall make arrangements at Tenant's expense for such disposal directly with a qualified and licensed disposal company at a lawful disposal site.

7.8 Additional Landlord's Services. Subject to reimbursement pursuant to Section 5.2 above, and subject further to Landlord's Force Majeure, Landlord shall provide the services described in Exhibit 9 attached hereto and made a part hereof, the costs of which shall be included in Operating Costs.

8. MAINTENANCE AND REPAIRS

8.1 Maintenance and Repairs by Tenant. Tenant shall keep the Premises (including all electronic, phone and data cabling and related equipment exclusively serving the Premises (other than building service equipment), fixtures, lighting, electrical equipment and wiring, non-structural walls, interior windows, floor coverings, doors and door frames and plate glass (provided that Landlord shall have the right to repair plate glass at Tenant's cost)) neat and clean and free of insects, rodents, vermin and other pests and, subject to Section 7.7 above, Trash, and in such good repair, order and condition as the same are in on the Commencement Date or in such better condition as the Premises may be put in during the Term, reasonable wear and tear and damage by insured Casualty excepted. Tenant shall be solely responsible, at Tenant's sole cost and expense, for the proper maintenance and repair of all building systems, sanitary, electrical, heating, air conditioning, plumbing, security or other systems and of all equipment and appliances to the extent installed and/or operated by Tenant and/or exclusively serving the Premises (provided that Landlord shall have the right to repair the same at Tenant's cost). Tenant agrees to provide regular maintenance by contract with a reputable qualified service contractor designated by Landlord for the heating and air conditioning, electrical, plumbing and life-safety equipment servicing the Premises, and any repairs to such heating and air conditioning, electrical, plumbing and life-safety equipment servicing the Premises shall be performed only by contractors approved by Landlord and only after Tenant first notifies Landlord in writing of the need for any such repairs and Landlord approves the same (or Landlord exercises its foregoing right to make such repairs at Tenant's cost). Tenant, at Landlord's request, shall at reasonable intervals provide Landlord with copies of such contracts and maintenance and repair records and/or reports. At least one (1) time a year, and other times as reasonably

requested by Landlord, Tenant shall provide Landlord with an annual report (the "M&R Annual Report") summarizing all maintenance and repairs projects conducted by Tenant since the prior M&R Annual Report. The M&R Annual Report shall be certified by an officer of Tenant, certifying to Landlord that such work has been, or is being, completed as described in the report.

8.2 Maintenance and Repairs by Landlord. Except as otherwise provided in Article 13, and subject to Tenant's obligations in Section 8.1 above, Landlord shall maintain the roof, Building structure (including the foundation, structural floor slabs and columns) and Building core (including the common restroom facilities), exterior window frames, and except to the extent exclusively serving the Premises, the base building systems and equipment (including sanitary, electrical, heating, air conditioning, plumbing and security systems) in reasonable repair, order and condition and in compliance with Legal Requirements. In addition, Landlord shall maintain the Common Areas in compliance with Legal Requirements and otherwise in substantially the same manner as comparable office buildings in the East Cambridge/Kendall Square area. All costs incurred by Landlord under this Section 8.2 shall be included in Operating Costs as provided in Section 5.2.

8.3 Accidents to Sanitary and Other Systems. Tenant shall give to Landlord prompt notice of any fire or accident in the Premises or in the Building and of any damage to, or defective condition in, any part or appurtenance of the Building including the sanitary, electrical, ventilation, heating and air conditioning or other systems located in, or serving, the Premises. Except as otherwise provided in Article 13, and subject to Tenant's obligations in Section 8.1 above, such damage or defective condition shall be remedied by Landlord with reasonable diligence, but, subject to Section 12.5 below, if such damage or defective condition was directly caused by any of the Tenant Parties, the cost to remedy the same shall be paid by Tenant.

8.4 Floor Load—Heavy Equipment. Tenant shall not place a load upon any floor of the Premises exceeding the floor load per square foot of area which such floor was designed to carry and which is allowed by Legal Requirements. Landlord reserves the right to prescribe the weight and position of all safes, heavy machinery, heavy equipment, freight, bulky matter or fixtures (collectively, "**Heavy Equipment**"), which shall be placed so as to distribute the weight. Heavy Equipment shall be placed and maintained by Tenant at Tenant's expense in settings sufficient in Landlord's reasonable judgment to absorb and prevent vibration, noise and annoyance. Tenant shall not move any Heavy Equipment into or out of the Building without giving Landlord prior written notice thereof and observing all of Landlord's Rules and Regulations with respect to the same. If such Heavy Equipment requires special handling, Tenant agrees to employ only persons holding a Master Rigger's License to do said work, and that all work in connection therewith shall comply with Legal Requirements. Any such moving shall be at the sole risk and hazard of Tenant and Tenant will defend, indemnify and save Landlord and Landlord's agents (including its property manager), contractors and employees (collectively with Landlord, the "**Landlord Parties**") harmless from and against any and all claims, damages, judgments, losses, penalties, costs, expenses and fees (including reasonable legal fees) (collectively, "**Claims**") resulting directly or indirectly from such moving. Proper placement of all Heavy Equipment in the Premises shall be Tenant's responsibility.

9. ALTERATIONS AND IMPROVEMENTS BY TENANT

9.1 Landlord's Consent Required. Tenant shall not make any alterations, decorations, installations, removals, additions or improvements (collectively, "**Alterations**") in or to the Premises without Landlord's prior written consent, in Landlord's sole discretion.

9.2 Harmonious Relations. Tenant agrees that it will not, either directly or indirectly, use any contractors and/or materials if their use will create any difficulty, whether in the nature of a labor dispute or otherwise, with other contractors and/or labor engaged by Tenant or Landlord or others in the construction, maintenance and/or operation of the Property or any part thereof. In the event of any such difficulty, upon Landlord's request, Tenant shall cause all contractors, mechanics or laborers causing such difficulty to leave the Property immediately.

9.3 Liens. Any mechanic's lien filed against the Premises or the Building for work claimed to have been done for, or materials claimed to have been furnished to, Tenant shall be discharged by Tenant within ten (10) days thereafter, at Tenant's expense by filing the bond required by law or otherwise.

10. SIGNAGE

10.1 Rights and Restrictions. Tenant shall have the right to install Building standard signage identifying Tenant's business at the entrance to the Premises, which signage shall be (a) at Tenant's sole cost and expense, and (b) subject to Landlord's prior written consent (which consent shall not be unreasonably withheld, conditioned or delayed) and (c) consistent with the signage design requirements set forth on Exhibit 12 attached hereto. Subject to the foregoing, Tenant shall not place or suffer to be placed or maintained on the exterior of the Premises, or any part of the interior visible from the exterior thereof, any sign, banner, advertising matter or any other thing of any kind, and shall not place or maintain any decoration, letter or advertising matter on the glass of any window or door of the Premises without first obtaining Landlord's written approval. As part of Landlord's Work, Landlord has provided Tenant with building standard window blinds, and Tenant may not remove such building standard blinds without Landlord's prior written consent.

10.2 Building Directory. Landlord shall list Tenant within the directory in the Building lobby at Landlord's sole cost and expense.

11. ASSIGNMENT, MORTGAGING AND SUBLETTING

11.1 Landlord's Consent Required. Tenant shall not, without Landlord's prior written consent, which consent may be withheld in Landlord's sole discretion, mortgage or otherwise encumber this Lease or the Premises in whole or in part. Tenant shall not, without Landlord's prior written consent, assign, sublet, license or transfer this Lease or the Premises in whole or in part whether by changes in the ownership or control of Tenant, or any direct or indirect owner of Tenant, whether at one time or at intervals, by sale or transfer of stock, partnership or beneficial interests, operation of law or otherwise, or permit the occupancy of all or any portion of the Premises by any person or entity other than Tenant's employees (each of the foregoing, a "**Transfer**"). Any purported Transfer made without Landlord's consent, if required hereunder, shall be void and confer no rights upon any third person, provided that if there is a Transfer, Landlord may collect rent from the transferee without waiving the prohibition against Transfers, accepting the transferee, or releasing Tenant from full performance under this Lease. In the event of any Transfer in violation of this Article 11, it shall be an Event of Default for which there is no notice or opportunity to cure. No Transfer shall relieve Tenant of its primary obligation as party Tenant hereunder, nor shall it reduce or increase Landlord's obligations under this Lease.

11.2 Landlord's Recapture Right

(a) Subject to Section 11.6 below, Tenant shall, prior to offering or advertising the Premises thereof for a Transfer or accepting an offer for a Transfer, give a written notice (the "**Recapture Notice**") to Landlord which: (i) states that Tenant desires to make a Transfer, (ii) identifies the affected portion of the Premises, which may not be less than the whole of the Premises (the "**Recapture Premises**"), (iii) identifies the period of time (the "**Recapture Period**") during which Tenant proposes to

sublet the Recapture Premises, or indicates that Tenant proposes to assign its interest in this Lease, and (iv) offers to Landlord to terminate this Lease with respect to the Recapture Premises (in the case of a proposed assignment of Tenant's interest in this Lease or a subletting for the remainder of the term of this Lease) or to suspend the Term for the Recapture Period (i.e. the Term with respect to the Recapture Premises shall be terminated during the Recapture Period and Tenant's rental obligations shall be proportionately reduced). Landlord shall have fifteen (15) business days within which to respond to the Recapture Notice.

(b) If Tenant does not enter into a Transfer on the terms and conditions contained in the Recapture Notice on or before the date which is seventy-five (75) days after the earlier of: (x) the expiration of the 15-business day period specified in Section 11.2(a) above, or (y) the date that Landlord notifies Tenant that Landlord elects not recapture the Recapture Premises, time being of the essence, then prior to entering into any Transfer after such 75-day period, Tenant must deliver to Landlord a new Recapture Notice in accordance with Section 11.2(a) above

11.3 Standard of Consent to Transfer. Subject to Landlord's rights set forth in Section 11.2 to terminate the Lease or suspend the Term, Landlord agrees that, subject to the provisions of this Article 11, Landlord shall not unreasonably withhold, condition or delay its consent to a Transfer of the Premises in whole but not in part, at fair market rent and otherwise on the terms contained in the Recapture Notice. It shall be reasonable for Landlord to withhold its consent to a Transfer (a) if the proposed assignee or sublessee, as the case may be (a "**Transferee**") will not use the Premises for the Permitted Uses, or (b) if, in Landlord's reasonable opinion: the Transferee (i) does not have a tangible net worth and other financial indicators sufficient to meet the Transferee's obligations under the Transfer instrument in question; (ii) does not have a business reputation compatible with the operation of a first-class office building or the tenant mix Landlord desires for the Building; and/or (c) intends to use the space subject to the Transfer for a use that violates any exclusive or restrictive use provisions then in effect with respect to any portion of the Property.

11.4 Profits In Connection with Transfers. Tenant shall, within thirty (30) days of receipt thereof, pay to Landlord fifty percent (50%) of any rent, sum or other consideration paid or given in connection with any Transfer, either initially or over time, after amortization of all reasonable out-of-pocket attorney fees, brokerage commissions and the cost of any improvements required by such Transfer, in excess of Rent hereunder as if such amount were originally called for by the terms of this Lease as additional rent.

11.5 Prohibited Transfers. Notwithstanding any contrary provision of this Lease, excepting only a Transfer permitted under Section 11.6, Tenant shall have no right to make a Transfer unless on both (i) the date on which Tenant notifies Landlord of its intention to enter into a Transfer and (ii) the date on which such Transfer is to take effect, there is not a Tenant default. Notwithstanding anything to the contrary contained herein, Tenant agrees that in no event shall Tenant make a Transfer to (a) any government agency; (b) any tenant, subtenant or occupant of other space in the Property; or (c) any entity with whom Landlord, or any affiliate of Landlord shall have negotiated for space in the Property, or in any of such affiliate's properties, in the six (6) months immediately preceding such proposed Transfer.

11.6 Permitted Transfers. Provided no monetary default or uncured Event of Default then-exists, Tenant shall have the right to make a Transfer without Landlord's consent, but with prior written notice to Landlord, to (a) an Affiliate so long as such entity remains in such relationship to Tenant, and (b) a Successor, provided that (i) prior to or simultaneously with any assignment pursuant to this Section 11.6, such Affiliate or Successor, as the case may be, and Tenant execute and deliver to Landlord an

assignment and assumption agreement in form and substance reasonably acceptable to Landlord whereby such Affiliate or Successor, as the case may be, shall agree to be independently bound by and upon all the covenants, agreements, terms, provisions and conditions set forth in the Lease on the part of Tenant to be performed, and whereby such Affiliate or Successor, as the case may be, shall expressly agree that the provisions of this Article 11 shall, notwithstanding such Transfer, continue to be binding upon it with respect to all future Transfers, and (ii) such Affiliate or Successor, as the case may be, has a net worth, computed in accordance with generally accepted accounting principles consistently applied, at least equal to the greater of (1) the Tangible Net Worth of Tenant immediately prior to such Transfer, or (2) the Tangible Net Worth of Tenant herein named on the date of this Lease. For the purposes hereof, an "**Affiliate**" shall be defined as any entity (xx) that has the financial wherewithal to meet its obligations under the Transfer instrument; and (yy) which is controlled by, is under common control with, or which controls Tenant. As used herein, "**control**" means direct or, either together with others acting as a group or otherwise, indirect ownership or possession of the right or power, by vote of stockholders or directors, or by contract, agreement or other arrangements, or otherwise, to direct, determine, prevent or otherwise dictate managerial, operational or other actions or activities of any such person, firm or corporation. For the purposes hereof, "**Successor**" shall mean any entity into or with which Tenant is merged or with which Tenant is consolidated or which acquires all or substantially all of Tenant's stock or assets, provided that the surviving entity shall have a net worth and other financial indicators sufficient to meet Tenant's obligations hereunder. For the purposes hereof, "**Tangible Net Worth**" shall mean the excess of total assets over total liabilities (in each case, determined in accordance with GAAP) excluding from the determination of total assets all assets which would be classified as intangible assets under GAAP, including, without limitation, goodwill, licenses, patents, trademarks, trade names, copyrights, and franchises. Notwithstanding the provisions of this Section 11.6, no transaction or series of transactions which are effected solely for the purpose of qualifying as a transaction which does not require Landlord's consent (i.e. and thereby avoiding the operation of the provisions of this Article 11) shall be permitted pursuant to this Section 11.6.

11.7 Investment Policies. Notwithstanding anything to the contrary contained herein, Tenant may not enter into any Transfer with any person or entity if the identity of such person or entity is inconsistent with the written investment policies of Landlord and/or Landlord's parent (as the same may change from time to time) as provided to Tenant by Landlord prior to Landlord's receipt of Tenant's notice of such proposed Transfer, and any such Transfer shall be void ab initio. The provisions of this Section 11.7 shall apply to all Transferees, including Affiliates and Successors. Notwithstanding the foregoing, the provisions of this Section 11.7 shall be of no further force and effect if Landlord and/or Fee Owner are no longer affiliates of Massachusetts Institute of Technology.

12. INSURANCE; INDEMNIFICATION; EXCULPATION

12.1 Tenant's Insurance.

(a) Tenant shall procure, pay for and keep in force throughout the Term (and for so long thereafter as Tenant remains in occupancy of the Premises) commercial general liability insurance and such other insurance specified on Exhibit 10 attached hereto.

12.2 Indemnification. Tenant shall defend, indemnify and save the Landlord Parties harmless from and against any and all Claims asserted by or on behalf of any person, firm, corporation or public authority arising from:

(a) Tenant's breach of any covenant or obligation under this Lease;

(b) Any injury to or death of any person, or loss of or damage to property, sustained or occurring in, upon, at or about the Premises;

(c) Any injury to or death of any person, or loss of or damage to property (A) arising out of the use or occupancy of the Premises by or (B) caused by or arising from the negligence or willful misconduct of any of the Tenant Parties; and

(d) On account of or based upon any work or thing whatsoever done (other than by Landlord or any of the Landlord Parties) at the Premises during the Term and during the period of time, if any, prior to the Commencement Date that any of the Tenant Parties may have been given access to the Premises.

This Section 12.2 (as well as any other provisions of this Lease dealing with indemnification of Landlord by Tenant) shall be deemed to be modified in each case by the insertion in the appropriate place of the following: "except as otherwise provided in Section 15 of Chapter 186 of the Massachusetts General Laws, as the same may be amended".

12.3 Property of Tenant. Tenant covenants and agrees that, to the maximum extent permitted by Legal Requirements, all of Tenant's Property at the Premises shall be at the sole risk and hazard of Tenant, and that if the whole or any part thereof shall be damaged, destroyed, stolen or removed from any cause or reason whatsoever, no part of said damage or loss shall be charged to, or borne by, Landlord, except, subject to Section 12.5 hereof, to the extent such damage or loss is due to the negligence or willful misconduct of any of the Landlord Parties.

12.4 Limitation of Landlord's Liability for Damage or Injury. Landlord shall not be liable for any injury or damage to persons or property resulting from fire, explosion, falling plaster, steam, gas, air contaminants or emissions, electricity, electrical or electronic emanations or disturbance, water, rain or snow or leaks from any part of the Building or from the pipes, appliances, equipment or plumbing works or from the roof, street or sub-surface or from any other place or caused by dampness, vandalism, malicious mischief or by any other cause of whatever nature, except to the extent caused by or due to the negligence or willful misconduct of any of the Landlord Parties, and then, where notice and an opportunity to cure are appropriate (i.e., where Tenant has an opportunity to know or should have known of such condition sufficiently in advance of the occurrence of any such injury or damage resulting therefrom as would have enabled Landlord to prevent such damage or loss had Tenant notified Landlord of such condition) only after (i) notice to Landlord of the condition claimed to constitute negligence or willful misconduct, and (ii) the expiration of a reasonable time after such notice has been received by Landlord without Landlord having commenced to take all reasonable and practicable means to cure or correct such condition; and pending such cure or correction by Landlord, Tenant shall take all reasonably prudent temporary measures and safeguards to prevent any injury, loss or damage to persons or property. Notwithstanding the foregoing, in no event shall any of the Landlord Parties be liable for any loss which is covered by insurance policies actually carried or required to be so carried by this Lease; nor shall any of the Landlord Parties be liable for any such damage caused by other tenants or persons in the Building or caused by operations in construction of any private, public, or quasi-public work; nor shall any of the Landlord Parties be liable for any latent defect in the Premises or in the Building.

12.5 Waiver of Subrogation; Mutual Release. Landlord and Tenant each hereby waives on behalf of itself and its property insurers (none of which shall ever be assigned any such claim or be entitled thereto due to subrogation or otherwise) any and all rights of recovery, claim, action, or cause of action against the other and its agents, officers, servants, partners, shareholders, or employees (collectively, the "**Related Parties**") for any loss or damage (excluding rights of recovery, claims, actions, and causes of action relating to damage to the roof of the Building caused by Tenant but

including rights of recovery, claims, actions, and causes of action relating to damage to the roof of the Building caused by any Casualty (hereinafter defined)) that may occur to or within the Premises or the Building or any improvements thereto, or any personal property of such party therein which is insured against under any property insurance policy actually being maintained by the waiving party from time to time, even if not required hereunder, or which would be insured against under the terms of any insurance policy required to be carried or maintained by the waiving party hereunder, whether or not such insurance coverage is actually being maintained, including, in every instance, such loss or damage that may be caused by the negligence of the other party hereto and/or its Related Parties. Landlord and Tenant each agrees to cause appropriate clauses to be included in its property insurance policies necessary to implement the foregoing provisions.

12.6 Tenant's Acts—Effect on Insurance. Tenant shall not do or permit any Tenant Party to do any act or thing upon the Premises or elsewhere in the Building which will invalidate or be in conflict with any insurance policies or warranties covering the Building and the fixtures and property therein; and shall not do, or permit to be done, any act or thing upon the Premises which shall subject Landlord to any liability or responsibility for injury to any person or persons or to property by reason of any business or operation being carried on upon said Premises or for any other reason. If by reason of Tenant's use of the Premises or the failure of Tenant to comply with the provisions of this Lease the insurance rate applicable to any policy of insurance shall at any time thereafter be higher than it otherwise would be, Tenant shall reimburse Landlord upon demand for that part of any insurance premiums which shall have been charged because of such use or failure by Tenant, together with interest at the Default Rate until paid in full, within ten (10) days after receipt of an invoice therefor.

13. CASUALTY; TAKING

13.1 Damage. If the Premises are damaged in whole or part because of fire or other insured casualty ("**Casualty**"), or if the Premises are subject to a taking in connection with the exercise of any power of eminent domain, condemnation, or purchase under threat or in lieu thereof (any of the foregoing, a "**Taking**"), then unless this Lease is terminated in accordance with Section 13.2 below, Landlord shall restore the Building and/or the Premises to substantially the same condition as existed prior to the Casualty, or in the event of a partial Taking which affects the Building and the Premises, restore the remainder of the Building and the Premises not so Taken to substantially the same condition as is reasonably feasible. If, in Landlord's reasonable judgment, any element of the Tenant-Insured Improvements can more effectively be restored as an integral part of Landlord's restoration of the Building or the Premises, such restoration shall also be made by Landlord, but at Tenant's sole cost and expense. Subject to rights of Mortgagees, any act or omission by Tenant and/or Tenant's agents, servants, employees, contractors, subcontractors, licensees and/or subtenants (collectively with Tenant, the "**Tenant Parties**") which causes an actual delay in the performance of Landlord's restoration work, Legal Requirements then in existence and to delays for adjustment of insurance proceeds or Taking awards, as the case may be, and instances of Landlord's Force Majeure, Landlord shall substantially complete such restoration within one (1) year after Landlord's receipt of all required permits therefor. Upon substantial completion of such restoration by Landlord, Tenant shall use diligent efforts to complete restoration of the Premises to substantially the same condition as existed immediately prior to such Casualty or Taking, as the case may be, as soon as reasonably possible. Tenant agrees to cooperate with Landlord in such manner as Landlord may reasonably request to assist Landlord in collecting insurance proceeds due in connection with any Casualty which affects the Premises or the Building. In no event shall Landlord be required to expend more than the Net (hereinafter defined) insurance proceeds Landlord receives for damage to the Premises and/or the Building or the Net Taking award attributable to the Premises and/or the Building. "**Net**" means the insurance proceeds or Taking award actually paid to Landlord (and not paid over to a Mortgagee) less all costs and expenses, including adjusters and attorneys' fees, of obtaining the same. In the fiscal year in which a Casualty occurs, there shall be included in Operating Costs Landlord's deductible under its property insurance policy. Except as Landlord may elect pursuant to this Section 13.1, under no circumstances shall Landlord be required to repair any damage to, or make any repairs to or replacements of, any Tenant-Insured Improvements.

13.2 Termination Rights.

(a) Landlord's Termination Rights. Landlord may terminate this Lease upon thirty (30) days' prior written notice to Tenant if:

(i) any material portion of the Building or any material means of access thereto is taken;

(ii) more than thirty-five percent (35%) of the Building is damaged by Casualty; or

(iii) if the estimated time to complete restoration exceeds one (1) year from the date on which Landlord receives all required permits for such restoration.

(b) Tenant's Termination Right. If Landlord is so required but fails to complete restoration of the Premises within the time frames and subject to the conditions set forth in Section 13.1 above, then Tenant may terminate this Lease upon sixty (60) days' written notice to Landlord; provided, however, that if Landlord completes such restoration within sixty (60) days after receipt of any such termination notice, such termination notice shall be null and void and this Lease shall continue in full force and effect. The remedies set forth in this Section 13.2(b) and in Section 13.2(c) below are Tenant's sole and exclusive rights and remedies based upon Landlord's failure to complete the restoration of the Premises as set forth herein.

(c) Either Party May Terminate. In the case of any Casualty or Taking affecting the Premises and occurring during the last twelve (12) months of the Term, then (i) if such Casualty or Taking results in more than twenty-five percent (25%) of the floor area of the Premises being unsuitable for the Permitted Uses, or (ii) the damage to the Premises costs more than $250,000 to restore, then either Landlord or Tenant shall have the option to terminate this Lease upon thirty (30) days' written notice to the other. In addition, if any Mortgagee does not release sufficient insurance proceeds to cover the cost of Landlord's restoration work, Landlord shall notify Tenant thereof. In such event, unless Landlord agrees in writing to cover the difference, Landlord or Tenant may terminate this Lease by written notice to the other within thirty (30) days after such notice from Landlord.

(d) Automatic Termination. In the case of a Taking of the entire Premises, then this Lease shall automatically terminate as of the date of possession by the Taking authority.

(e) Tenant shall assign to Landlord all of its right, title and interest in and to the insurance proceeds for any Alterations (a) if the Term shall expire prior to the completion of Tenant's restoration pursuant to Section 13.1 above, or (ii) if this Lease is terminated pursuant to any provision of this Lease prior to the completion of Tenant's restoration pursuant to Section 13.1 above, in each case equal to the sum of the unamortized costs of any portion of any Alterations that were not designated for removal pursuant to Article 9.

(f) Notwithstanding anything to the contrary contained herein, Tenant may not terminate this Lease pursuant to this Article 13 if the Casualty in question was caused by the negligence or willful misconduct of any of the Tenant Parties.

13.3 Taking for Temporary Use. If the Premises are Taken for temporary use, this Lease and Tenant's obligations, including the payment of Rent, shall continue. For purposes hereof, "**Taken for temporary use**" shall mean a Taking of ninety (90) days or less.

13.4 Disposition of Awards. Except for any separate award for Tenant's movable trade fixtures, relocation expenses, and unamortized leasehold improvements paid for by Tenant (provided that the same may not reduce Landlord's award), all Taking awards to Landlord or Tenant shall be Landlord's property without Tenant's participation, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant may pursue its own claim against the Taking authority.

14. ESTOPPEL CERTIFICATE. Tenant shall at any time and from time to time upon not less than ten (10) days' prior notice from Landlord, execute, acknowledge and deliver to Landlord a statement in writing certifying that this Lease is unmodified and in full force and effect (or if there have been modifications, that the same is in full force and effect as modified and stating the modifications), and the dates to which Rent has been paid in advance, if any, stating whether or not Landlord is in default in performance of any covenant, agreement, term, provision or condition contained in this Lease and, if so, specifying each such default, and such other facts as Landlord may reasonably request, it being intended that any such statement delivered pursuant hereto may be relied upon by Landlord, any prospective purchaser of the Building or of any interest of Landlord therein, any Mortgagee or prospective Mortgagee thereof, any lessor or prospective lessor thereof, any lessee or prospective lessee thereof, or any prospective assignee of any Mortgagee. Time is of the essence with respect to any such requested certificate, Tenant hereby acknowledging the importance of such certificates in mortgage financing arrangements, prospective sales and the like. If Tenant shall fail to execute and deliver to Landlord any such statement within such ten-day period, Tenant hereby appoints Landlord as Tenant's attorney-in-fact in its name and behalf to execute such statement, such appointment being coupled with an interest.

15. HAZARDOUS MATERIALS

15.1 Prohibition. Except for de minimis quantities of standard office supplies and cleaning materials stored in compliance with Environmental Laws (hereinafter defined) and in proper containers, Tenant shall not, without the prior written consent of Landlord, which may be withheld in Landlord's sole discretion, bring or permit to be brought or kept in or on the Premises or elsewhere in the Building (i) any inflammable, combustible or explosive fluid, material, chemical or substance; or (ii) any Hazardous Material (hereinafter defined). Upon at least forty-eight (48) hours' notice, except that no notice shall be required in an emergency, Landlord shall have the right, from time to time, to inspect the Premises for compliance with the terms of this Section 15.1 at Tenant's sole cost and expense.

15.2 Environmental Laws. For purposes hereof, "**Environmental Laws**" shall mean all laws, statutes, ordinances, rules and regulations of any local, state or federal governmental authority having jurisdiction concerning environmental, health and safety matters, including but not limited to any discharge by any of the Tenant Parties into the air (including indoor air and outdoor air), surface water, sewers, soil or groundwater of any Hazardous Material (hereinafter defined) whether within or outside the Premises, including (a) the Federal Water Pollution Control Act, 33 U.S.C. Section 1251 et seq., (b) the Federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq., (c) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601 et seq., (d) the Toxic Substances Control Act of 1976, 15 U.S.C. Section 2601 et seq., (e) Chapter 21C of the General Laws of Massachusetts; and (f) Chapter 21E of the General Laws of Massachusetts. Tenant, at its sole cost and expense, shall comply with (i) all Environmental Laws, and (ii) any rules, requirements and safety procedures of the Massachusetts Department of Environmental Protection, the City of Cambridge and any insurer of the Building or the Premises with respect to Tenant's use, storage and disposal of any Hazardous Materials.

15.3 Hazardous Material Defined. As used herein, the term "**Hazardous Material**" means asbestos, oil or any hazardous, radioactive or toxic substance, material or waste or petroleum derivative which is or becomes regulated by any Environmental Law, including live organisms, viruses and fungi, medical waste and any so-called "**biohazard**" materials, and any material on the right to know list of the Occupational Safety and Health Administration. The term "**Hazardous Material**" includes oil and/or any material or substance which is (i) designated as a "**hazardous substance**," "**hazardous material**," "**oil**," "**hazardous waste**" or toxic substance under any Environmental Law or (ii) contains any component now or hereafter designated as such.

15.4 Pre-Existing Hazardous Materials. Tenant acknowledges that asbestos is present in the Building. Landlord shall, at its sole cost and expense, comply with all Environmental Laws with respect to the existence of Hazardous Materials in, on or at the Property as of the Execution Date.

16. RULES AND REGULATIONS

16.1 Rules and Regulations. Tenant will faithfully observe and comply with all rules and regulations promulgated from time to time with respect to the Building, the Property and construction within the Property (collectively, the "**Rules and Regulations**"). The current version of the Rules and Regulations is attached hereto as Exhibit 11. In the case of any conflict between the provisions of this Lease and any future rules and regulations, the provisions of this Lease shall control. Nothing contained in this Lease shall be construed to impose upon Landlord any duty or obligation to enforce the Rules and Regulations or the terms, covenants or conditions in any other lease as against any other tenant and Landlord shall not be liable to Tenant for violation of the same by any other tenant, its servants, employees, agents, contractors, visitors, invitees or licensees.

16.2 Energy Conservation. Notwithstanding anything to the contrary contained herein, Landlord may institute upon written notice to Tenant such policies, programs and measures as may be necessary, required, or expedient for the conservation and/or preservation of energy or energy services (collectively, the "**Conservation Program**"), provided, however, that the Conservation Program does not, by reason of such policies, programs and measures, reduce the level of energy or energy services being provided to the Premises below the level of energy or energy services then being provided in comparable office buildings in the East Cambridge/Kendall Square area, or as may be necessary or required to comply with Legal Requirements or standards or the other provisions of this Lease. Upon receipt of such notice, Tenant shall comply with the Conservation Program at Tenant's sole cost and expense. Without limiting the foregoing, Tenant acknowledges that the Building intends to obtain Leadership in Energy and Environmental Design ("LEED") certification as established by the U.S. Green Building Council ("USGBC"). Any reasonable costs incurred by Landlord in connection with maintaining such certification shall be considered Operating Costs. Tenant shall cooperate as reasonably requested by Landlord in the maintenance of such certification to the extent required to maintain the same.

16.3 Recycling. Landlord may establish policies, programs and measures for the recycling of paper, products, plastic, and other materials (a "**Recycling Program**"). Upon receipt of such notice, Tenant will comply with the Recycling Program at Tenant's sole cost and expense.

17. LEGAL REQUIREMENTS

17.1 Legal Requirements. Tenant shall be responsible at its sole cost and expense for complying with (and keeping the Premises in compliance with) all Legal Requirements that are applicable to Tenant's manner of use or occupancy of, or Alterations made by or on behalf of Tenant to, the Premises. Tenant shall furnish all data and information to governmental authorities, with a copy to

Landlord, as required in accordance with Legal Requirements as they relate to Tenant's use or occupancy of the Premises or the Building. If Tenant receives notice of any violation of Legal Requirements applicable to the Premises or the Building, it shall give prompt notice thereof to Landlord. Nothing contained in this Section 17.1 shall be construed to expand the uses permitted hereunder beyond the Permitted Uses.

18. DEFAULT

18.1 Events of Default. The occurrence of any one or more of the following events shall constitute an "**Event of Default**" hereunder by Tenant:

(a) If Tenant fails to make any payment of Rent or any other payment required hereunder, as and when due, and such failure shall continue for a period of three (3) days after notice thereof from Landlord to Tenant; provided, however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if (i) Tenant fails to make any payment on or before the due date therefor, and (ii) Landlord has given Tenant written notice under this Section 18.1(a) on more than one (1) occasion during the twelve (12) month interval preceding such failure by Tenant;

(b) If Tenant shall vacate or abandon the Premises (whether or not the keys shall have been surrendered or the Rent shall have been paid);

(c) If Tenant shall fail to execute and deliver to Landlord an estoppel certificate pursuant to Article 14 above or a subordination and attornment agreement pursuant to Article 20 below, within the timeframes set forth therein and such failure continues for five (5) days after notice thereof;

(d) If Tenant shall fail to maintain any insurance required hereunder;

(e) If Tenant shall fail to restore the Security Deposit to its original amount or deliver a replacement Letter of Credit as required under Article 6 above;

(f) If Tenant causes or suffers any release of Hazardous Materials in, on or near the Property;

(g) If Tenant shall make a Transfer in violation of the provisions of Article 11 above, or if any event shall occur or any contingency shall arise whereby this Lease, or the term and estate thereby created, would (by operation of law or otherwise) devolve upon or pass to any person, firm or corporation other than Tenant, except as expressly permitted under Article 11 hereof;

(h) If Tenant fails to comply with the provisions of Article 2 and/or Section 4.2 above, and such failure shall continue for a period of three (3) days after notice thereof from Landlord to Tenant; provided, however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice if (i) Tenant fails to comply with the provisions of Article 2 or Section 4.2 above, and (ii) Landlord has given Tenant written notice under this Section 18.1(h) on more than one (1) occasion during the twelve (12) month interval preceding such failure by Tenant;

(i) The failure by Tenant to observe or perform any of the covenants or provisions of this Lease to be observed or performed by Tenant, other than as specified above, and such failure continues for more than thirty (30) days after notice thereof from Landlord; provided, further, that if the nature of Tenant's default is such that more than thirty (30) days are reasonably required for its cure, then Tenant shall not be deemed to be in default if Tenant shall commence such cure within said thirty (30) day period and thereafter diligently prosecute such cure to completion, which completion shall occur not later than ninety (90) days from the date of such notice from Landlord regardless of the reason for lack of completion;

(j) Tenant makes an assignment for the benefit of creditors, or a receiver, trustee or custodian is appointed to or does take title, possession or control of all or substantially all of Tenant's assets;

(k) Tenant files a voluntary petition under the United States Bankruptcy Code or any successor statute (as the same may be amended from time to time, the "Bankruptcy Code") or an order for relief is entered against Tenant pursuant to a voluntary or involuntary proceeding commenced under any chapter of the Bankruptcy Code, or any involuntary petition is filed against Tenant under any chapter of the Bankruptcy Code and is not dismissed within one hundred twenty (120) days;

(l) Any judgment, attachment or the like in excess of $100,000 shall be entered, recorded or filed against Tenant in any court, registry, etc. and Tenant shall fail to pay such judgment within thirty (30) days after the judgment shall have become final beyond appeal or to discharge or secure by surety bond such lien, attachment, etc. within thirty (30) days of such entry, recording or filing, as the case may be; or

(m) The leasehold hereby created shall be taken on execution or by other process of law and shall not be revested in Tenant within thirty (30) days thereafter.

Tenant shall reimburse Landlord, within thirty (30) days after demand, for Landlord's reasonable out-of-pocket costs and expenses (including legal fees and costs) incurred in connection with the preparation and delivery of each notice of default delivered pursuant to this Section 18.1 (which notice of default may include such demand for payment).

18.2 Remedies. Upon an Event of Default, Landlord may, by notice to Tenant, elect to terminate this Lease; and thereupon (and without prejudice to any remedies which might otherwise be available to Landlord, including for arrears of Rent or preceding breach of covenant or agreement and without prejudice to Tenant's liability for damages as hereinafter stated), upon the giving of such notice, this Lease shall terminate as of the date specified therein as though that were the Expiration Date. Upon such termination, Landlord shall have the right to utilize the Security Deposit or draw down the entire Letter of Credit, as applicable, and apply the proceeds thereof to its damages hereunder. Without being taken or deemed to be guilty of any manner of trespass or conversion, and without being liable to indictment, prosecution or damages therefor, Landlord may, by lawful process, enter into and upon the Premises (or any part thereof in the name of the whole); repossess the same, as of its former estate; and expel Tenant and those claiming under Tenant. The words "**re-entry**" and "**re-enter**" as used in this Lease are not restricted to their technical legal meanings.

18.3 Damages—Termination.

(a) Upon the termination of this Lease under the provisions of this Article 18, Tenant shall pay to Landlord Rent up to the time of such termination, shall continue to be liable for any breach or default preceding such termination, and in addition, shall pay to Landlord as damages, at the election of Landlord, either:

(i) the amount (discounted to present value at the rate of five percent (5%) per annum) by which, at the time of the termination of this Lease (or at any time thereafter if Landlord shall have initially elected damages under Section 18.3(a)(ii) below), (x) the aggregate of Rent projected over the period commencing with such termination and ending on the Expiration Date, exceeds (y) the aggregate projected rental value of the Premises for such period, taking into account a reasonable time period during which the Premises shall be unoccupied, plus all Reletting Costs (hereinafter defined); or

(ii) amounts equal to Rent which would have been payable by Tenant had this Lease not been so terminated, payable upon the due dates therefor specified herein following such termination and until the Expiration Date, provided, however, if Landlord shall re-let the Premises during such period, then Landlord shall credit Tenant with the net rents received by Landlord from such re-letting, such net rents to be determined by first deducting from the gross rents as and when received by Landlord from such re-letting the expenses incurred or paid by Landlord in terminating this Lease, as well as the expenses of re-letting, including altering and preparing the Premises for new tenants, brokers' commissions, and all other similar and dissimilar expenses properly chargeable against the Premises and the rental therefrom (collectively, "**Reletting Costs**"), it being understood that any such re-letting may be for a period equal to or shorter or longer than the remaining Term at Landlord's sole and absolute discretion without otherwise affecting this remedy; and provided, further, that (x) in no event shall Tenant be entitled to receive any excess of such net rents over the sums payable by Tenant to Landlord hereunder and (y) in no event shall Tenant be entitled in any suit for the collection of damages pursuant to this Section 18.3(a)(ii) to a credit in respect of any net rents from a re-letting except to the extent that such net rents are actually received by Landlord prior to the commencement of such suit. If the Premises or any part thereof should be re-let in combination with other space, then proper apportionment on a square foot area basis shall be made of the rent received from such re-letting and of the expenses of re-letting.

(b) In calculating the amount due under Section 18.3(a)(i), above, there shall be included, in addition to the Base Rent, all other considerations agreed to be paid or performed by Tenant, including Tenant's Share of Operating Costs and Tenant's Tax Share of Taxes, on the assumption that all such amounts and considerations would have increased at the rate of five percent (5%) per annum for the balance of the full term hereby granted.

(c) Suit or suits for the recovery of such damages, or any installments thereof, may be brought by Landlord from time to time at its election, and nothing contained herein shall be deemed to require Landlord to postpone suit until the date when the Term would have expired if it had not been terminated hereunder.

(d) Nothing herein contained shall be construed as limiting or precluding the recovery by Landlord against Tenant of any sums or damages to which, in addition to the damages particularly provided above, Landlord may lawfully be entitled by reason of any Event of Default hereunder.

(e) In lieu of any other damages or indemnity and in lieu of full recovery by Landlord of all sums payable under all the foregoing provisions of this Section 18.3, Landlord may, by written notice to Tenant, at any time after this Lease is terminated under any of the provisions herein contained or is otherwise terminated for breach of any obligation of Tenant and before such full recovery, elect to recover, and Tenant shall thereupon pay, as liquidated damages, an amount equal to the aggregate of (x) an amount equal to the lesser of (1) Rent accrued under this Lease in the twelve (12) months immediately prior to such termination, or (2) Rent payable during the remaining months of the Term if this Lease had not been terminated, plus (y) the amount of Rent accrued and unpaid at the time of termination, less (z) the amount of any recovery by Landlord under the foregoing provisions of this Section 18.3 up to the time of payment of such liquidated damages; Tenant hereby acknowledging that the damages which Landlord may suffer as the result of the termination of this Lease as a result of an Event of Default over cannot be determined as of the Execution Date. The terms and provisions of Section 18.3 shall survive the expiration or termination of this Lease.

18.4 Landlord's Self-Help; Fees and Expenses. If Tenant shall default in the performance of any covenant on Tenant's part to be performed in this Lease contained, including the obligation to maintain the Premises in the required condition pursuant to Section 8.1 above, Landlord may, upon reasonable advance notice, except that no notice shall be required in an emergency, immediately, or at any time thereafter, perform the same for the account of Tenant. Tenant shall pay to Landlord upon demand therefor any costs incurred by Landlord in connection therewith, together with interest at the Default Rate until paid in full. In addition, Tenant shall pay all of Landlord's costs and expenses, including reasonable attorneys' fees, incurred (i) in enforcing any obligation of Tenant under this Lease or (ii) as a result of Landlord or any of the Landlord Parties being made party to any litigation pending by or against any of the Tenant Parties.

18.5 Waiver of Redemption, Statutory Notice and Grace Periods. Tenant does hereby waive and surrender all rights and privileges which it might have under or by reason of any present or future Legal Requirements to redeem the Premises or to have a continuance of this Lease for the Term hereby demised after being dispossessed or ejected therefrom by process of law or under the terms of this Lease or after the termination of this Lease as herein provided. Except to the extent prohibited by Legal Requirements, any statutory notice and grace periods provided to Tenant by law are hereby expressly waived by Tenant.

18.6 Landlord's Remedies Not Exclusive. The specified remedies to which Landlord may resort hereunder are cumulative and are not intended to be exclusive of any remedies or means of redress to which Landlord may at any time be lawfully entitled, and Landlord may invoke any remedy (including the remedy of specific performance) allowed at law or in equity as if specific remedies were not herein provided for; Tenant hereby acknowledging that the damages which Landlord may suffer as the result of the termination of this Lease as a result of an Event of Default over cannot be determined as of the Execution Date.

18.7 No Waiver. Landlord's failure to seek redress for violation, or to insist upon the strict performance, of any covenant or condition of this Lease, or any of the Rules and Regulations promulgated hereunder, shall not prevent a subsequent act, which would have originally constituted a violation, from having all the force and effect of an original violation. The receipt by Landlord of Rent with knowledge of the breach of any covenant of this Lease shall not be deemed a waiver of such breach. The failure of Landlord to enforce any of such Rules and Regulations against Tenant and/or any other tenant in the Building shall not be deemed a waiver of any such Rules and Regulations. No provisions of this Lease shall be deemed to have been waived by either party unless such waiver shall be in writing signed by such party against whom a waiver is claimed. No payment by Tenant or receipt by Landlord of a lesser amount than the Rent herein stipulated shall be deemed to be other than on account of the stipulated Rent, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as Rent be deemed an accord and satisfaction, and Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or pursue any other remedy in this Lease provided.

18.8 Restrictions on Tenant's Rights. During the continuation of any Event of Default, (a) Landlord shall not be obligated to provide Tenant with any notice pursuant to Sections 2.3 above; and (b) Tenant shall not have the right to make, nor to request Landlord's consent or approval with respect to, any Alterations.

18.9 Landlord Default. Notwithstanding anything to the contrary contained in the Lease, Landlord shall in no event be in default in the performance of any of Landlord's obligations under this Lease unless Landlord shall have failed to perform such obligations within thirty (30) days (or such additional time as is reasonably required to correct any such default, provided Landlord commences cure

within 30 days) after written notice by Tenant to Landlord properly specifying wherein Landlord has failed to perform any such obligation. Except as expressly set forth in this Lease, Tenant shall not have the right to terminate or cancel this Lease or to withhold Rent or to set-off or deduct any claim or damages against Rent as a result of any default by Landlord or breach by Landlord of its covenants or any warranties or promises hereunder. In addition, Tenant shall not assert any right to deduct the cost of repairs or any monetary claim against Landlord from Rent due and payable under this Lease.

19. SURRENDER; ABANDONED PROPERTY; HOLD-OVER

19.1 Surrender

(a) Upon the expiration or earlier termination of the Term, Tenant shall (i) peaceably quit and surrender to Landlord the Premises broom clean, in good order, repair and condition excepting only ordinary wear and tear and damage by fire or other insured Casualty; (ii) remove all of Tenant's Property (including all cabling, trade fixtures, furniture and equipment) and, to the extent specified by Landlord, Alterations made by Tenant, and (iii) repair any damages to the Premises or the Building caused by the installation or removal of Tenant's Property and/or such Alterations. Tenant's obligations under this Section 19.1(a) shall survive the expiration or earlier termination of this Lease.

(b) No act or thing done by Landlord during the Term shall be deemed an acceptance of a surrender of the Premises, and no agreement to accept such surrender shall be valid, unless in writing signed by Landlord. Unless otherwise agreed by the parties in writing, no employee of Landlord or of Landlord's agents shall have any power to accept the keys of the Premises prior to the expiration or earlier termination of this Lease. The delivery of keys to any employee of Landlord or of Landlord's agents shall not operate as a termination of this Lease or a surrender of the Premises.

(c) Notwithstanding anything to the contrary contained herein, Tenant shall, at its sole cost and expense, remove from the Premises, prior to the end of the Term, any item installed by or for Tenant and which, pursuant to Legal Requirements, must be removed therefrom before the Premises may be used by a subsequent tenant.

(d) Tenant hereby assigns to Landlord any warranties in effect on the last day of the Term with respect to any fixtures and Alterations remaining in the Premises. Tenant shall provide Landlord with copies of any such warranties prior to the expiration of the Term (or, if the Lease is earlier terminated, within five (5) days thereafter).

19.2 Abandoned Property. After the expiration or earlier termination of this Lease, if Tenant fails to remove any property from the Building or the Premises that Tenant is obligated by the terms of this Lease to remove within five (5) business days after written notice from Landlord, such property (the "**Abandoned Property**") shall be conclusively deemed to have been abandoned, and may either be retained by Landlord as its property or sold or otherwise disposed of in such manner as Landlord may see fit. If any item of Abandoned Property shall be sold, Tenant hereby agrees that Landlord may receive and retain the proceeds of such sale and apply the same, at its option, to the expenses of the sale, the cost of moving and storage, any damages to which Landlord may be entitled under Article 18 hereof or pursuant to law, and to any arrears of Rent.

19.3 Holdover. If any of the Tenant Parties holds over after the end of the Term, Tenant shall be deemed a tenant-at-sufferance subject to the provisions of this Lease; provided that whether or not Landlord has previously accepted payments of Rent from Tenant, (i) Tenant shall, for the first thirty (30) days after the Expiration Date, pay Base Rent at 150% of the highest rate of Base Rent payable during the Term, and thereafter pay Base Rent at 200% of the highest rate of Base Rent payable during the Term, (ii)

Tenant shall continue to pay to Landlord all additional rent, and (iii) Tenant shall be liable for all damages, including lost business and consequential damages, incurred by Landlord as a result of such holding over, Tenant hereby acknowledging that Landlord may need the Premises after the end of the Term for other tenants and that the damages which Landlord may suffer as the result of Tenant's holding over cannot be determined as of the Execution Date. Nothing contained herein shall grant Tenant the right to holdover after the expiration or earlier termination of the Term or affect Tenant's status as a tenant-at-sufferance during any holdover period.

20. MORTGAGEE RIGHTS

20.1 Subordination. Tenant's rights and interests under this Lease shall be (i) subject and subordinate to any existing or future (a) ground lease (including without the Master Lease), (b) subleases or other instruments pursuant to any sale and leaseback transaction of the Master Lease or the Property, and (c) any mortgages, deeds of trust, overleases, or similar instruments covering the Premises, the Building and/or the Land and to all advances, modifications, renewals, replacements, and extensions thereof (each of the foregoing, a "**Mortgage**"), or (ii) if any Mortgagee elects, prior to the lien of any present or future Mortgage. Tenant further shall attorn to and recognize any successor landlord, whether through foreclosure or otherwise, as if the successor landlord were the originally named landlord. The provisions of this Section 20.1 shall be self-operative and no further instrument shall be required to effect such subordination or attornment; however, Tenant agrees to execute, acknowledge and deliver such instruments, confirming such subordination and attornment in such form as shall be requested by any such holder within ten (10) business days of request therefor. If Tenant shall fail to execute and deliver to Landlord any such statement within such ten-day period, Tenant hereby appoints Landlord as Tenant's attorney-in-fact in its name and behalf to execute such statement, such appointment being coupled with an interest. With respect to the Master Lease, Tenant shall execute and deliver to Landlord simultaneously with its execution and delivery of this Lease, the Subordination, Non-Disturbance and Attornment Agreement (the "**Master Lease SNDA**") in the form attached hereto as Exhibit 13. Landlord may record the Master Lease SNDA in the Registry at its sole cost and expense.

20.2 Mortgagee Notices. Tenant shall give each Mortgagee the same notices given to Landlord concurrently with the notice to Landlord, and each Mortgagee shall have a reasonable opportunity to cure a Landlord default after the expiration of Landlord's applicable notice and/or cure periods if Landlord fails to do so, and Mortgagee's curing of any of Landlord's default shall be treated as performance by Landlord.

20.3 Mortgagee Liability. Tenant acknowledges and agrees that if any Mortgage shall be foreclosed, (a) the liability of the Mortgagee and its successors and assigns shall exist only so long as such Mortgagee or purchaser is the owner of the Premises, and such liability shall not continue or survive after further transfer of ownership; and (b) such Mortgagee and its successors or assigns shall not be (i) liable for any act or omission of any prior lessor under this Lease; (ii) liable for the performance of Landlord's covenants pursuant to the provisions of this Lease which arise and accrue prior to such entity succeeding to the interest of Landlord under this Lease or acquiring such right to possession; (iii) subject to any offsets or defense which Tenant may have at any time against Landlord; (iv) bound by any Rent or other amounts which Tenant may have paid previously for more than one (1) month; or (v) liable for the performance of any covenant of Landlord under this Lease which is capable of performance only by the original Landlord.

21. QUIET ENJOYMENT. Landlord covenants that so long as Tenant keeps and performs each and every covenant, agreement, term, provision and condition herein contained on the part and on behalf of Tenant to be kept and performed, Tenant shall peaceably and quietly hold, occupy and enjoy the Premises during the Term from and against the claims of all persons lawfully claiming by, through or under Landlord subject, nevertheless, to the covenants, agreements, terms, provisions and conditions of this Lease, any matters of record or of which Tenant has knowledge and to any Mortgage to which this Lease is subject and subordinate, as hereinabove set forth.

22. NOTICES. Any notice, consent, request, bill, demand or statement hereunder by either party to the other party shall be in writing and shall be deemed to have been duly given when either delivered by hand or by nationally recognized overnight courier or refused, as the case may be (in either case with evidence of delivery or refusal thereof) and addressed as follows:

If to Landlord:	MIT 139 Main Street Leasehold LLC c/o MIT Cambridge Real Estate LLC One Broadway, Suite 09-200 Cambridge, MA 02142 Attention: President
With copies to:	MIT Investment Management Company One Broadway, Suite 09-200 Cambridge, MA 02142 Attention: Director of Real Estate Legal Services
and:	Jones Lang LaSalle Americas, Inc. One Broadway, 6th Floor Cambridge, MA 02142 Attention: Group Manager
With a copy by email to:	
If to Tenant:	Prior to the Commencement Date: At the address set forth in the Lease Summary Sheet. After the Commencement Date: At the Premises Email address:
With a copy to:	_____ _____ _____

Notwithstanding the foregoing, and except in those instances where oral notices are permitted under this Lease, any notice from Landlord to Tenant regarding ordinary business operations (e.g., exercise of a right of access to the Premises, maintenance activities, invoices, etc.) may also be given by written notice delivered by electronic mail to any person at the Premises whom Landlord reasonably believes is authorized to receive such notice on behalf of Tenant without copies as specified above. Either party may at any time change the address or specify an additional address for such notices by delivering or mailing, as aforesaid, to the other party a notice stating the change and setting forth the changed or additional address, provided such changed or additional address is within the United States and is not a post office box. Notices shall be effective upon the date of receipt or refusal thereof. Any notice given by an attorney on behalf of Landlord shall be considered as given by Landlord and shall be fully effective. Any notice given by an attorney on behalf of Tenant shall be considered as given by Tenant and shall be fully effective.

23. MISCELLANEOUS

23.1 Separability. If any provision of this Lease or portion of such provision or the application thereof to any person or circumstance is for any reason held invalid or unenforceable, the remainder of this Lease (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby.

23.2 Captions; Interpretation. The captions are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Lease nor the intent of any provisions thereof. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. Unless expressly stated otherwise, the use of the word "**including**" or "**include"** in this Lease shall be deemed to mean "**including without limitation**" or "**include without limitation**" in each instance.

23.3 Broker. Tenant and Landlord each warrants and represents that it has dealt with no broker in connection with the consummation of this Lease other than CBRE and Jones Lang LaSalle (collectively, "**Broker**"). Tenant and Landlord each agrees to defend, indemnify and save the other harmless from and against any Claims arising in breach of its representation and warranty set forth in the immediately preceding sentence. Landlord shall be solely responsible for the payment of any brokerage commissions to Broker in connection with this Lease.

23.4 Entire Agreement. This Lease, Lease Summary Sheet and the Exhibits attached hereto and incorporated herein contain the entire and only agreement between the parties and any and all statements and representations, written and oral, including previous correspondence and agreements between the parties hereto, are merged herein. Tenant acknowledges that all representations and statements upon which it relied in executing this Lease are contained herein and that Tenant in no way relied upon any other statements or representations, written or oral. This Lease may not be modified orally or in any manner other than by written agreement signed by the parties hereto, provided that no amendment or modification may be effected by text message, electronic mail or similar communication.

23.5 Governing Law; Personal Jurisdiction. This Lease is made pursuant to, and shall be governed by, and construed in accordance with, the laws of the Commonwealth of Massachusetts and any applicable local municipal rules, regulations, by-laws, ordinances and the like. Any litigation relating to this Lease shall be brought in the state or federal courts in the Commonwealth of Massachusetts, and each party consents to personal jurisdiction in such courts.

23.6 Tenant Representations. Tenant hereby guarantees, warrants and represents to Landlord that (i) Tenant is duly incorporated or otherwise established or formed and validly existing under the laws of its state of incorporation, establishment or formation, (ii) Tenant has and is duly qualified to do business in the state in which the Property is located, (iii) Tenant has full corporate, partnership, trust, limited liability company or other appropriate power and authority to enter into this Lease and to perform all of Tenant's obligations hereunder, (iv) each person (and all of the persons if more than one signs) signing this Lease on behalf of Tenant is duly and validly authorized to do so; and (v) neither the execution, delivery or performance of this Lease, nor the consummation of the transactions contemplated hereby, will violate or conflict with any provision of documents or instruments under which Tenant is constituted or to which Tenant is a party.

23.7 Expenses Incurred by Landlord Upon Tenant Requests. Tenant shall, upon demand, reimburse Landlord for all reasonable expenses, including legal fees, incurred by Landlord in connection with all requests by Tenant for consents, approvals or execution of collateral documentation related to this Lease, including costs incurred by Landlord in the review and approval of Tenant's plans and specifications in connection with proposed Alterations to be made by Tenant to the Premises or in connection with requests by Tenant for Landlord's consent to make a Transfer. Such costs shall be deemed to be additional rent under this Lease.

23.8 Survival. Without limiting any other obligation of Tenant which may survive the expiration or prior termination of the Term, all obligations on the part of Tenant to indemnify, defend, or hold Landlord harmless, as set forth in this Lease (including Section 12.2) shall survive the expiration or prior termination of the Term.

23.9 Limitation of Liability. Tenant shall neither assert nor seek to enforce any claim against Landlord or any of the Landlord Parties, or the assets of any of the Landlord Parties, for breach of this Lease or otherwise, other than against Landlord's interest in the Property, and Tenant agrees to look solely to such interest for the satisfaction of any liability of Landlord under this Lease. This Section 23.9 shall not limit any right that Tenant might otherwise have to obtain injunctive relief against Landlord. Landlord and Tenant specifically agree that in no event shall any officer, director, manager, member, trustee, employee or representative of Landlord or any of the other Landlord Parties ever be personally liable for any obligation under this Lease, nor shall Landlord or any of the other Landlord Parties be liable for consequential, incidental or punitive damages or for lost profits whatsoever in connection with this Lease.

23.10 Binding Effect. The covenants, agreements, terms, provisions and conditions of this Lease shall bind and benefit the successors and assigns of the parties hereto with the same effect as if mentioned in each instance where a party hereto is named or referred to, except that no violation of the provisions of Article 11 hereof shall operate to vest any rights in any successor or assignee of Tenant. A facsimile, PDF or other electronic signature on this Lease shall be equivalent to, and have the same force and effect as, an original signature.

23.11 Landlord Obligations upon Transfer. Upon any sale, transfer or other disposition of the Building, Landlord shall be entirely relieved from the performance and observance accruing thereafter of all covenants and obligations hereunder on the part of Landlord to be performed and observed, it being understood and agreed in such event (and it shall be deemed and construed as a covenant running with the land) that the person succeeding to Landlord's ownership of said reversionary interest shall thereupon and thereafter assume, and perform and observe, any and all of such covenants and obligations of Landlord, except as otherwise agreed in writing.

23.12 Grants of Interest. Tenant shall not grant any security interest whatsoever in any fixtures within the Premises without the consent of Landlord. Tenant shall notify Landlord within ten (10) business days after the filing of any UCC statement relating to Tenant's Property.

23.13 No Air Rights. No rights to any view or to light or air over any property, whether belonging to Landlord or any other person, are granted to Tenant by this Lease. If at any time any windows of the Premises are temporarily darkened or the light therefrom is obstructed by reason of any repairs, improvements, maintenance or cleaning in or about the Property, the same shall be without liability to Landlord and without any reduction or diminution of Tenant's obligations under this Lease.

23.14 Relocation. Landlord, at its expense, at any time after the completion of the Initial Term, may cause Tenant to relocate from the Premises to space of reasonably comparable size and utility ("**Relocation Space**") within the Building upon sixty (60) days' prior written notice to Tenant, which notice shall set forth the date by which Tenant must complete such relocation and surrender the prior Premises, as well as a reasonable description of the Relocation Space. From and after the date of the relocation, Base Rent, Tenant's Share and Tenant's Tax Share shall be adjusted based on the rentable square footage of the Relocation Space. If the Relocation Space is on a lower floor in the Building, Landlord shall reduce the then-applicable Base Rent by an amount that Landlord reasonably and in good faith determines is appropriate to account for the lower floor location of the Relocation Space. Provided there is no Event of Default nor any event which, with the passage of time and/or the giving of notice would constitute an Event of Default, Landlord shall, within thirty (30) days after receipt of a reasonably detailed invoice, reimburse Tenant for Tenant's reasonable costs of relocation, including all costs for moving Tenant's furniture, equipment, supplies and other personal property, as well as the cost of printing and distributing change of address notices to Tenant's customers and one month's supply of stationery showing the new address so long as such invoice is delivered to Landlord within sixty (60) days after the effective date of such relocation.

23.15 Counterparts. This Lease may be executed in two or more counterparts, and by each or either of the parties in separate counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

23.16 Financial Information. Tenant shall deliver to Landlord, within one hundred twenty days (120) days after the end of each fiscal year of Tenant as well as anytime within thirty (30) days after Landlord's reasonable request, Tenant's most recently completed balance sheet and related statements of income, shareholder's equity and cash flows statements (audited if available) reviewed by an independent certified public accountant and certified by an officer of Tenant as being true and correct in all material respects. Any such financial information may be relied upon by any actual or potential lessor, purchaser, or mortgagee of the Property or any portion thereof. Tenant's fiscal year is January 1 to December 31. Tenant may change its fiscal year upon written notice to Landlord.

23.17 Measurements. Landlord shall have the right, from time to time, to measure the Building and the Premises in accordance with the then-current Standard Method of Measurement for Office Buildings (ANSI/BOMA) (or if such standard is no longer in use, using an industry-standard method of measurement reasonably selected by Landlord) and to make an appropriate adjustment to Base Rent, Tenant's Share and Tenant's Tax Share. Tenant shall execute an agreement confirming such measurements and adjustments within ten (10) business days after Landlord's request therefor. Tenant's failure to execute and return any such agreement proposed by Landlord, or to provide written objection to the statements contained therein, within ten (10) business days after the date of Tenant's receipt thereof, shall be deemed an approval by Tenant of Landlord's determination of such dates as set forth therein.

23.18 OFAC. Tenant warrants and represents to Landlord as of the date hereof and throughout the Term that it is not owned or controlled, directly or indirectly, by any person or government from countries or other areas that are subject to economic, trade, sectoral, or transactional sanctions imposed by the United States Government, and that neither Tenant nor any of its owners, directors, officers or group companies appears on any lists of known or suspected terrorists, terrorist organizations or other prohibited persons made publicly available or published by any agency of the government of the United States or any other jurisdiction in which Tenant is doing business, including but not limited to the List of Specially Designated Nationals and Blocked Persons maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury. Tenant shall notify Landlord immediately if these circumstances change.

23.19 Confidentiality. Tenant acknowledges and agrees that the terms of this Lease are confidential. Disclosure of the terms hereof could adversely affect the ability of Landlord to negotiate other leases with respect to the Building and may impair Landlord's relationship with other tenants of the Building. Tenant agrees that it and its partners, officers, directors, employees, brokers, and attorneys, if any, shall not disclose the terms and conditions of this Lease to any other person or entity without the prior written consent of Landlord, which may be given or withheld by Landlord, in Landlord's sole discretion, except as required for financial disclosures or securities filings, as required by the order of any court or public body with authority over Tenant, or in connection with any litigation between Landlord and Tenant with respect to this Lease. It is understood and agreed that damages alone would be an inadequate remedy for the breach of this provision by Tenant, and Landlord shall also have the right to seek specific performance of this provision and to seek injunctive relief to prevent its breach or continued breach.

23.20 Security. Landlord reserves the right, but not the obligation, to install security and other monitoring devices in and around the Building, including devices that monitor the usage of the Common Areas. Tenant acknowledges that security devices and services, if any, while intended to deter crime, may not in given instances prevent theft or other criminal acts. Landlord shall not be liable for injuries or losses caused by criminal acts of third parties, and Tenant assumes the risk that any security device or service may malfunction or otherwise be circumvented by a criminal. If Tenant desires protection against such criminal acts, then Tenant shall, at Tenant's sole cost and expense, obtain appropriate insurance coverage. Tenant's security programs and equipment for the Premises shall be coordinated with Landlord and subject to Landlord's reasonable approval.

23.21 Time. Time is of the essence as to the performance of Tenant's obligations under this Lease. Except as expressly set forth herein, any time period which ends on a non-business day shall be extended to the first subsequent business day.

23.22 WAIVER OF JURY TRIAL. TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

23.23 Bankruptcy. In the event a debtor, trustee or debtor in possession under the Bankruptcy Code, or another person with similar rights, duties and powers under any other Legal Requirements, proposes to cure any Tenant default under this Lease or to assume or assign Tenant's interest under this Lease, and is obliged to provide adequate assurance to Landlord that (a) a default shall be cured, (b) Landlord shall be compensated for its damages arising from any breach of this Lease, and (c) future performance of Tenant's obligations under this Lease shall occur, then such adequate assurances shall include any or all of the following, as designated by Landlord in its sole and absolute discretion: (i) those acts specified in the Bankruptcy Code or other Legal Requirements as included within the meaning of "**adequate assurance**," even of this Lease does not concern a shopping center or other facility described in such Legal Requirements; (ii) a prompt cash payment to compensate Landlord for any monetary defaults or actual damages arising directly from a breach of this Lease; (iii) a cash deposit in an amount at least equal to the then-current amount of the Letter of Credit; or (iv) the assumption or assignment of all of Tenant's interest and obligations under this Lease.

23.24 Not Binding Until Executed. This Lease shall have no binding force or effect, shall not constitute an offer or an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution and delivery of this Lease by both parties.

[SIGNATURES ON FOLLOWING PAGE]

EXECUTED under seal as of the Execution Date.

LANDLORD:

MIT 139 MAIN STREET LEASEHOLD LLC, a Massachusetts limited liability company

By: MIT CAMBRIDGE REAL ESTATE LLC, its manager

By: /s/ Seth D. Alexander
Name: Seth D. Alexander
Title: President, and not individually

TENANT:

STOKE THERAPEUTICS, INC., a Delaware corporation

By: /s/ Edward M. Kaye MD
Name: Edward M. Kaye MD
Title: CEO

EXHIBIT 1

LEGAL DESCRIPTION

A certain parcel of land situated and now numbered 137 to 145 Main Street in Cambridge, Middlesex County, Massachusetts, being the premises shown as Lot A on a plan entitled “Plan of Premises in Cambridge, Massachusetts, W.A. Mason & Son Co., Surveyors, September 13, 1926, Changes October 30, 1926”, recorded in Plan Book 385, Plan 49, said premises being bounded and described according to said plan as follows:

SOUTHERLY on the Northerly side of said Main Street, ninety (90) feet;

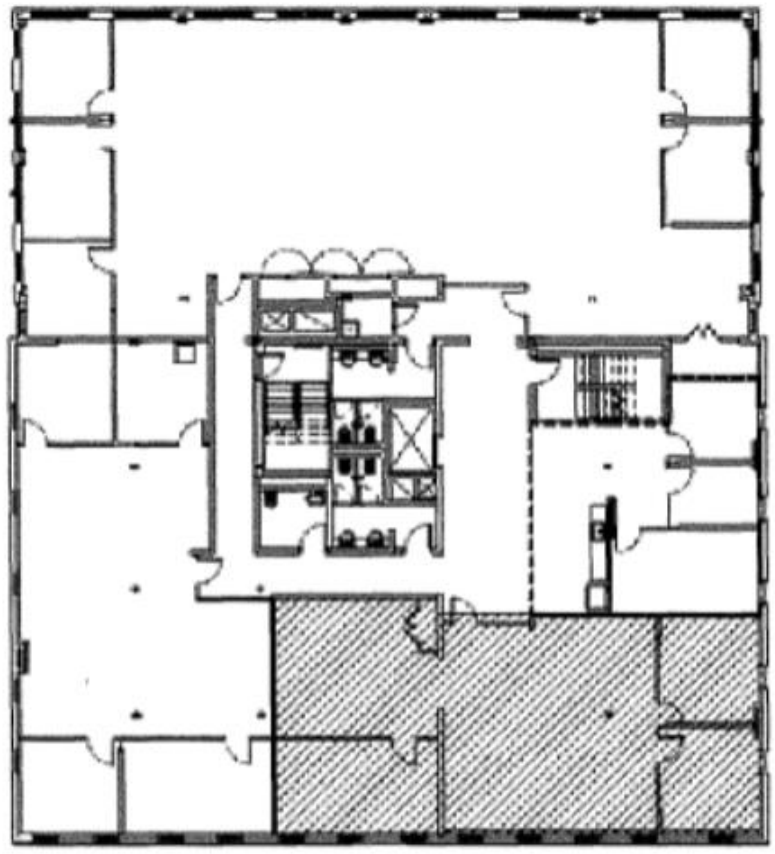
WESTERLY on land now or formerly of W.R. Mason et al, one hundred four and 07/100 (104.07) feet;

NORTHERLY by Lot B as shown on said plan, ninety and 01/100 (90.01) feet; and

EASTERLY on land now or formerly of heirs of Mrs. Brooks, one hundred five and 66/100 (105.66) feet.

EXHIBIT 2

LEASE PLAN



LEGEND

Tenant Premises - Tenant 403, Fourth Floor

Shared Floor Common Amenity Area

Note: Shared Floor Common Amenity Area is shown for reference only and is not part of tenant premises.

MITIMCo

EXHIBIT 3

MEMORIALIZATION OF DATES AGREEMENT

[ ]

Stoke Therapeutics, Inc.
3 Preston Court
Suite 102
[Attn:]

Re: Lease dated ([as amended,] the "Lease") by and between MIT 139 Main Street Leasehold LLC ("Landlord"), and Stoke Therapeutics, Inc. ("Tenant") with respect to 2,485 rentable square feet on the fourth (4th) floor of the Building located at 139 Main Street, Cambridge, Massachusetts

Dear :

In accordance with the terms and conditions of the Lease, Tenant accepts possession of the Premises and acknowledges:

1. The Commencement Date is .

2. The Expiration Date is .

This letter is binding upon and shall inure to the benefit of Landlord and Tenant and their respective successors and assigns.

Please acknowledge the foregoing and your acceptance of possession by signing a copy of this letter in the space provided and returning it to . Tenant's failure to execute and return this letter, or to provide written objection to the statements contained in this letter, within ten (10) business days after the date of this letter, shall be deemed an approval by Tenant of the statements contained herein.

Sincerely,

MIT 139 MAIN STREET LEASEHOLD LLC, a Massachusetts limited liability company

By: MIT CAMBRIDGE REAL ESTATE LLC, its manager

By: _____
Name:
Title:

Acknowledged and Accepted:

STOKE THERAPEUTICS, INC., a Delaware corporation

By: _____
Name:
Title:

DATE: , 20

EXHIBIT 4

[INTENTIONALLY OMITTED]

EXHIBIT 5

WORK LETTER

Landlord's Work consists of (i) the work described as Landlord's responsibilities on the Landlord/Tenant Responsibilities Matrix attached hereto as Exhibit 5A and (ii) the work identified on the Landlord's Work Plans attached hereto as Exhibit 5B. Landlord's Work shall be deemed "**Substantially Complete**" on the date (A) that Landlord's Work is substantially completed (as certified in writing by Landlord's architect) in accordance with (i) the Landlord/Tenant Responsibilities Matrix and (ii) the Landlord's Work Plans, except for punchlist items, the incompleteness of which does not materially interfere with Tenant's ability to use or occupy the Premises for the Permitted Uses, and (B) Landlord has obtained either a completed or "signed off" building permit or temporary or permanent certificate of occupancy for the Premises from the Inspectional Services Department of the City of Cambridge; provided, however, to the extent Landlord is delayed in performing Landlord's Work and/or obtaining such building permit sign off or certificate of occupancy because of the acts or omissions of Tenant or any employee, contractor, agent or representative of Tenant (which omissions may include Tenant's failure to install its furniture and/or perform any Alterations not included in Landlord's Work), then for purposes only of calculating the Commencement Date, Landlord's Work will be deemed to have been substantially complete on the date on which the building permit sign off or certificate of occupancy (temporary or permanent) would have been issued but for such delays.

Tenant, at its sole cost and expense, shall be responsible for all items on the Landlord/Tenant Responsibilities Matrix identified as Tenant's responsibility, including procuring and installing all trade fixtures, furniture and equipment Tenant may require to operate its business in the Premises and all telecommunications cabling and wiring. Tenant may select Premises' paint color from Landlord's building standard selection.

Upon Landlord's Work being Substantially Complete, and without limiting Landlord's rights under Section 23.18, Landlord may ask its architect to re-measure the Premises and/or the Building in accordance with Section 23.18 and make the appropriate adjustments to Base Rent, Tenant's Share and Tenant's Tax Share, and Tenant shall execute and deliver to Landlord the agreement required thereby confirming such adjustments.

EXHIBIT 5A

LANDLORD/TENANT RESPONSIBILITIES MATRIX

139 Main Street, Cambridge MA

Allocation of Responsibility between Landlord and Tenant

DESCRIPTION	BY LANDLORD	TI Work BY LANDLORD	TENANT COST/ RESPONSIBILIY
GENERAL			
Newly renovated Cambridge Historic Landmark building	X		
All construction for core & shell building upgrades compliant with Massachusetts State Building Code, 9th Edition and International Energy Code 2015	X		
Core & shell improvements to be LEED Version 4 Certified project	X		
On site covered parking area	X		
SITE WORK			
Sidewalks, landscaping, parking	X		
BUILDING ENVELOPE			
Brick facade with cementitious stucco at the Floor 5.	X		
Existing windows to replaced with new energy efficient operable windows.	X		
ROOFING			
EPDM roofing system	X		
Any rooftop tenant equipment and associated dunnage, penetrations and walkway pads, subject to Landlord approval			X
STRUCTURE			
Ground floor Office Tenants: Wood framed floor with allowable live load of 50 psf plus 20 psf partition load.	X		
Lvl 2 - 5 Office Tenants: Steel girders and wood-framed floor with allowable live load of 50 psf plus 20 psf partition load	X		
Structural upgrades, openings, bearing wall modifications, or other structural changes to the Base Building to accommodate specific tenant requirements, subject to Landlord approval			X
Floor-to-floor height: Varies by floor from ll'-3" ft to 12'-3"	X		
Fire ratings per building code	X		
Fire ratings per building code for all work associated with standard tenant fit outs		X	

139 Main Street, Cambridge MA
Allocation of Responsibility between Landlord and Tenant

DESCRIPTION	BY LANDLORD	TI Work BY LANDLORD	TENANT COST/ RESPONSIBILIY
Fire ratings per building code for all work associated with specific tenant modifications beyond standard tenant fit out, subject to Landlord approval			X
COMMON AREAS			
Main lobby including common area signage/directory, finishes, and accent lighting	X		
Main electrical service room, main tele/data room and fire pump room, including finishes	X		
Ground level trash and recycling areas	X		
Ground floor shower rooms with new building standard finishes similar to upper floor toilet rooms (see below)	X		
Ground floor toilet rooms with new building standard finishes similar to upper floor toilet rooms (see below)	X		
Toilet rooms on upper floors, complete with tile finishes, plumbing fixtures, toilet partitions, toilet accessories, sinks with mirror above, ceiling, lighting and paint. A separate accessible toilet room on each upper floor with similar finishes.	X		
Electric closet and tel/data closet serving each upper floor.	X		
Janitor closet serving each upper floor.	X		
Elevator lobbies and common corridors finished to building standards.	X		
Shared meeting spaces / conference rooms at all floors fit out with AV provisions on each floor finished to building standard		X	
Open kitchenette on each floor with sink, refridgerator, microwave, filtered water station, dishwasher, coffee maker		X	
Finished exit stairs	X		
Roof Terrace	X		
TENANT AREAS			
Glazed tenant entry with card access security		X	
Exposed brick feature walls. Painted drywall finish at other walls.		X	
Insulation and painted drywall finish at exterior walls.	X		

139 Main Street, Cambridge MA

Allocation of Responsibility between Landlord and Tenant

DESCRIPTION	BY LANDLORD	TI Work BY LANDLORD	TENANT COST / RESPONSIBILIY
Finished building standard interior window sills	X		
Carpet tile throughout with accent, wood flooring at main tenant entries.		X	
Acoustically treaded open ceilings with exposed MEP systems and lighting		X	
Partitions, ceilings, floorings, painting, other finishes, doors, and all other build out including office / conf room and closet within tenant spaces as indicated on the construction plans and lease documents as landlord provided.		X	
Window treatments to match building standard		X	
Configuration changes, additions or modifications to above items.			X
Additional private offices, meeting rooms, huddle rooms or other rooms.			X
Fixtures, Furnishings and Equipment (FFE)			
FFE within building common and floor common areas including shared conference rooms, meeting areas, kitchenettes and roof terrace	X		
FFE within tenant areas			X
SIGNAGE			
Building directory and wayfinding signage	X		
Tenant Entry signage / branding (only allowed on tenant entry glass, subject to Landlord approval)			X
ELEVATORS			
Newly modernized hydraulic passenger elevator serving all floors, 2,500 lb capacity	X		
FIRE PROTECTION			
Sprinkler service including fire department connections.	X		
Fire pump and related controls	X		
Primary loop with sprinkler heads spaced to meet code.	X		
Complete sprinkler system within tenant area to match standard building layout and meets code		X	
Fire extinguishers in core areas	X		
Fire extinguishers and cabinets in tenant areas		X	
Base building fire alarm system	X		

DESCRIPTION	BY LANDLORD	TI Work BY LANDLORD	TENANT COST/ RESPONSIBILIY
Detection and annunciation devices in common areas	X		
Detection and annunciation devices in tenant areas		X	
Modifications to fire protection and fire alarm systems due to tenant configuration changes or modifications to tenant areas beyond LL provided scope, or due to installation of tenant equipment. All components to be consistent with and compatible with base building system.			X
PLUMBING			
Building water service from municipal water system with backflow prevention	X		
Waste and vent risers on each floor available for tenant tie-in including 3” waste and 2” waste and vent connections for tenant use.	X		
Domestic cold water supply with 1” capped cold water valve at each floor available for tenant tie-in	X		
Base building plumbing, including production and distribution of hot water to common shared toilet rooms and kitchenettes.	X		
Natural gas system to supply base building systems.	X		
Distribution of domestic water from Landlord provided riser/ valve, flow meter for domestic water, production of hot water for tenant use, distribution of waste and vent for tenant use			X
HVAC			
HVAC systems infrastructure meeting design standards suitable to office use, supporting 1.2 CFM per square foot	X		
Base building medium pressure supply and low pressure return air distribution system (risers and stubouts from shafts)	X		
VAVs, piping distribution for hot water reheats and supply / return air distribution within building common areas	X		
Hot water riser loop with capped and valved connections at each floor with a total hot water flow of 25 gpm per typical floor	X		
VAVs and supply / return air distribution within tenant areas		X	
Piping distribution for the hot water reheats at the VAVs within tenant areas		X	

139 Main Street, Cambridge MA

Allocation of Responsibility between Landlord and Tenant

DESCRIPTION	BY LANDLORD	TI Work BY LANDLORD	TENANT COST/ RESPONSIBILIY
Building management system serving base building systems	X		
Automatic temperature control system in tenant areas connected to building management system		X	
Modifications to HVAC systems due to tenant configuration changes or modifications to tenant areas beyond LL provided scope, or due to installation of tenant equipment. All components to be consistent with and compatible with base building system.			X
ELECTRICAL			
Primary electrical service to the building from Eversource	X		
Bus duct riser through building core	X		
Distribution panel	X		
Metering and panels, transformers, receptacles, and lighting in tenant areas		X	
Emergency and egress lighting in common areas	X		
Emergency and egress lighting in tenant areas		X	
Electrical feeds to systems furnishing equipment based on building standard furnishings layout. Please note that the power feed for furniture will be standard NEMA 5-15R receptacles. Therefore furniture will need to be prewired with standard NEMA 5-15P plugs		X	
Modifications to electrical systems due to tenant configuration changes or modifications to tenant area, or due to installation of tenant equipment. All components to be consistent with and compatible with base building system.			X
SECURITY			
Card Access security at exterior doors and elevator access to floors	X		
Card Access security at main tenant entry		X	
Additional security within tenant space.			X
TEL/DATA			
Conduit into building and to demarc room	X		
Grounding & bonding of all base building OSP cabling and conduit	X		
Circuit protection of any copper pairs entering the building	X		
Conduit from demarc room to base of riser closets	X		

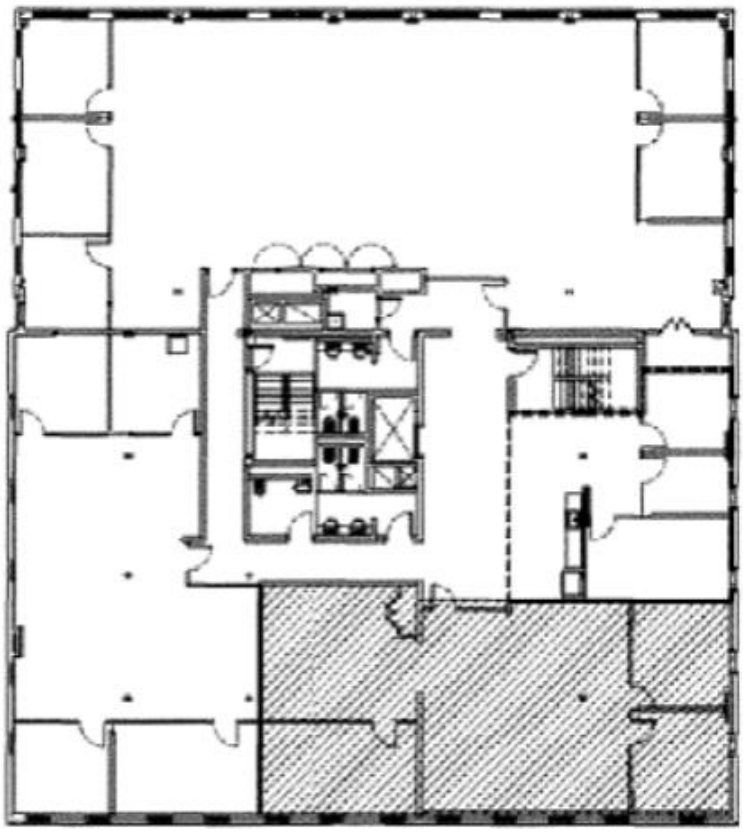
139 Main Street, Cambridge MA

Allocation of Responsibility between Landlord and Tenant

DESCRIPTION	BY LANDLORD	TI Work BY LANDLORD	TENANT COST/ RESPONSIBILIY
Cabling from demarc room to floor IDFs (tel / data closets)	X		
Building common unsecured wifi in building common areas	X		
Cabling from floor IDFs to tenant server location within tenant space		X	
CAT 6A cabling from designated server location within the tenant area: Two cables per fixed workstation / office based on building sample plans.		X	
Additional telephone and data within tenant areas beyond the building standard referenced above			X
Specialty power receptacles (ex. L5-30R) for equipment connections			X
Audio-visual systems within tenant areas			X
Racks, servers, network switches, equipment cabinets etc for within tenant areas including any tenant secure wifi			X

EXHIBIT 5B

LANDLORD'S WORK PLAN



LEGEND

Tenant Premises - Tenant 403, Fourth Floor

Floor

Note: Shared Base Common Area is shown for reference only and is not part of tenant premises

MITIMCo

FINISH MATERIAL SCHEDULE

CEILINGS

ACOUSTICAL CEILING PANEL (LEVEL 1 TENANT ONLY, SPACE BETWEEN JOISTS):
- TECTUM FINALE 2” WHITE TWH
ACOUSTICAL CEILING PANEL: ARMSTRON OPTIMA CONCEALED , WHITE WITH PRELUDE 15/16” SUSPENSION SYSTEMS, 48” X 48”; TENANT OFFICES
SONASPRAY: 1” WHITE (TYPICAL)

PAINT

P-5 PAINT BENJAMIN MOORE WHITE (TYPICAL)
P-6 MARKERBOARD WALL PAINT IDEAPAINT CREATE CLEAR TENANT SPACES WHERE INDICATED

ACOUSTICAL WALL PANELS

ACOUSTICAL WALL PANEL KIREI ECHOPANEL 12MM 551; TENANT PHONE BOOTHS

PLASTIC LAMINATE

PL-03 PLASTIC LAMINATE WILSONART D354-60 DESIGNER WHITE CLOSET SHELVES

WINDOWS:

WINDOW SILLS- PAINTED WOOD (WHITE)

WALL BASE

B-5 RUBBER BASE JOHNSONITE TRADITIONAL WALL BASE 20 CHARCOAL 4” HIGH CARPET AT GWB WALLS

CARPET

CPT-1 CARPET TILE SHAW CONTRACT EMBELLISH TILE INLAY METAL 71556 24” X 24” TENANT OPEN SPACES
CPT-2 CARPET TILE SHAW CONTRACT WANDER TILE AIRY 37530 24” X 24” TENANT OFFICES

WOOD FLOORING

WF-1 WOOD FLOORING NYDREE WIDE PLANK SERIES PINEAPPLE 7.5” X RANDOM 18”-72”

GLAZING:

GLAZING SYSTEM: LITESPACE BY SPACEWORKS, WITH BLACK ANODIZED FINISH

EXHIBIT 6

OPERATING COSTS

"**Operating Costs**" shall mean all costs incurred and expenditures of whatever nature made by Landlord in the operation, management, repair, replacement, maintenance and insurance (including environmental liability insurance and property insurance on Landlord-supplied leasehold improvements for tenants, but not property insurance on tenants' equipment) of the Property or allocated to the Property, including all costs of labor (wages, salaries, fringe benefits, etc.) up to and including the group or portfolio manager, however denominated, any costs for utilities supplied to exterior areas and the Common Areas, and any costs for repair and replacements, cleaning and maintenance of exterior areas and the Common Areas, related equipment, facilities and appurtenances and HVAC equipment, security services, a management fee paid to Landlord's property manager, the costs, including a commercially reasonable rental factor, of Landlord's management office for the Property (which management office may be located outside the Property and which may serve other properties in addition to the Property (in which event the costs thereof shall be equitable allocated along the properties served by such office)), the cost of operating any amenities in the Property available to all tenants of the Property and any subsidy provided by Landlord for or with respect to any such amenity, and the costs of any consultants and/or experts engaged to evaluate cost-savings measures for the Property (including tax and energy conservation consultants). To the extent that a cost included in Operating Costs is also allocable to property other than the Property, such cost shall be equitably allocated to each parcel of property which benefits from such cost. Operating Costs shall not include Excluded Costs (hereinafter defined). Landlord shall have the right but not the obligation, from time to time, to equitably allocate some or all of the Operating Costs among different tenants of the Property (for example, and without limiting the generality of the foregoing, based in whole or in part on shared or similar use of particular systems or equipment).

"**Excluded Costs**" shall mean (i) any mortgage charges (including interest, principal, points and fees); (ii) brokerage commissions; (iii) salaries of executives and owners not directly employed in the management/operation of the Property; (iv) the cost of work done by Landlord for a particular tenant; (v) the cost of items which, by generally accepted accounting principles, would be capitalized on the books of Landlord or are otherwise not properly chargeable against income, except to the extent such capital item is (A) required by any Legal Requirements, (B) reasonably projected to reduce Operating Costs, or (C) reasonably expected to improve the management, security and/or operation of the Building; (vi) the costs of any contributions made by Landlord to any tenant of the Property in connection with the build-out of its premises; (vii) franchise or income taxes imposed on Landlord; (viii) costs paid directly by individual tenants to suppliers, including tenant electricity, telephone and other utility costs; (ix) increases in premiums for insurance when such increase is caused by the use of the Property by Landlord or any other tenant of the Property; (x) maintenance and repair of capital items not a part of, or used in connection with, the Property; (xi) depreciation of the Property; (xii) costs relating to maintaining Landlord's existence as a corporation, partnership or other entity; (xiii) advertising and other fees and costs incurred in procuring tenants; (xiv) the cost of any items for which Landlord is actually reimbursed by insurance, condemnation awards, refund, rebate or otherwise, and any expenses for repairs or maintenance to the extent covered by warranties, guaranties and service contracts; and (xv) costs incurred in connection with any disputes between Landlord and its employees, between Landlord and Building management, or between Landlord and other tenants or occupants.

EXHIBIT 7

TAXES

"**Taxes**" shall mean the real estate taxes and other taxes, levies and assessments imposed upon the Property, and upon any personal property of Landlord used in the operation thereof, or on Landlord's interest therein or such personal property or reasonably allocated thereto (provided that to the extent the Property is not a separate tax parcel, such amounts shall be allocated among the buildings located on the tax parcel of which the Property is a part and shall be based on the assessor's records or, if the records do not provide a separate allocation, based on square footage of the buildings in question unless Landlord reasonably determines that such allocation should be made on another basis); charges, fees and assessments for transit, housing, police, fire or other services or purported benefits to the Property (including any community preservation assessments); service or user payments in lieu of taxes; and any and all other taxes, levies, betterments, assessments and charges arising from the ownership, leasing, operation, use or occupancy of the Property or based upon rentals derived therefrom, which are or shall be imposed by federal, state, county, municipal or other governmental authorities. If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. From and after substantial completion of any occupiable improvements constructed as part of a Future Development, if such improvements are not separately assessed, Landlord shall reasonably allocate Taxes between the Building and such improvements and the land area associated with the same. Taxes shall not include any inheritance, estate, succession, gift, franchise, rental, income or profit tax, capital stock tax, capital levy or excise, or any income taxes arising out of or related to the ownership and operation of the Property, provided, however, that any of the same and any other tax, excise, fee, levy, charge or assessment, however described, that may in the future be levied or assessed as a substitute for or in addition to, in whole or in part, any tax, levy or assessment which would otherwise constitute Taxes, whether or not now customary or in the contemplation of the parties on the Execution Date of this Lease, shall constitute Taxes, but only to the extent calculated as if the Property were the only real estate owned by Landlord. "**Taxes**" shall also include reasonable expenses (including legal and consultant fees) of tax abatement or other proceedings contesting assessments or levies. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is increased by a value attributable to improvements in or alterations to the Premises made by Tenant, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. The amount of any such payment by Landlord shall constitute additional rent due from Tenant to Landlord within thirty (30) days of invoice therefor.

"**Tax Period**" shall be any fiscal/tax period in respect of which Taxes are due and payable to the appropriate governmental taxing authority (i.e., as mandated by the governmental taxing authority), any portion of which period occurs during the Term of this Lease.

EXHIBIT 8

FORM OF LETTER OF CREDIT

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER _____

ISSUE DATE:

ISSUING BANK:

BENEFICIARY:
[LANDLORD ENTITY]
c/o MIT CAMBRIDGE REAL ESTATE LLC
238 MAIN STREET, SUITE 200
CAMBRIDGE, MA 02142

APPLICANT:

AMOUNT: US$ (AND 00/100 U.S. DOLLARS)

EXPIRATION DATE: (ONE YEAR FROM ISSUANCE)

LOCATION:

DEAR SIR/MADAM:

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. SVBSF IN YOUR FAVOR AVAILABLE BY YOUR DRAFTS DRAWN ON US AT SIGHT IN THE FORM OF EXHIBIT "A" ATTACHED AND ACCOMPANIED BY THE FOLLOWING DOCUMENTS: THE ORIGINAL OF THIS LETTER OF CREDIT AND ALL AMENDMENT(S), IF ANY.

PARTIAL DRAWS AND MULTIPLE PRESENTATIONS ARE ALLOWED.

THIS LETTER OF CREDIT SHALL BE AUTOMATICALLY EXTENDED FOR AN ADDITIONAL PERIOD OF ONE YEAR, WITHOUT AMENDMENT, FROM THE PRESENT OR EACH FUTURE EXPIRATION DATE UNLESS AT LEAST 60 DAYS PRIOR TO THE THEN CURRENT EXPIRATION DATE WE SEND YOU A NOTICE BY REGISTERED MAIL OR OVERNIGHT COURIER SERVICE AT THE ABOVE ADDRESS THAT THIS LETTER OF CREDIT WILL NOT BE EXTENDED BEYOND THE CURRENT EXPIRATION DATE. IN NO EVENT SHALL THIS LETTER OF CREDIT BE AUTOMATICALLY EXTENDED BEYOND . IN THE EVENT OF SUCH NOTICE OF NON-EXTENSION, YOU MAY DRAW HEREUNDER WITH A DRAFT STATED ABOVE AND ACCOMPANIED BY THIS ORIGINAL LETTER OF CREDIT AND AMENDMENT(S), IF ANY.

THIS LETTER OF CREDIT IS TRANSFERABLE ONE OR MORE TIMES, BUT IN EACH INSTANCE ONLY TO A SINGLE BENEFICIARY AS TRANSFEREE AND ONLY UP TO THE THEN AVAILABLE AMOUNT, ASSUMING SUCH TRANSFER TO SUCH TRANSFEREE WOULD BE IN COMPLIANCE WITH THEN APPLICABLE LAW AND REGULATION, INCLUDING BUT NOT LIMITED TO THE REGULATIONS OF THE U. S. DEPARTMENT OF TREASURY AND U. S. DEPARTMENT OF COMMERCE. AT THE TIME OF TRANSFER, THE ORIGINAL LETTER OF CREDIT AND ORIGINAL AMENDMENT(S), IF ANY, MUST BE SURRENDERED TO US AT OUR ADDRESS INDICATED IN THIS LETTER OF CREDIT TOGETHER WITH OUR TRANSFER FORM ATTACHED HERETO AS EXHIBIT "B" DULY EXECUTED. THE CORRECTNESS OF THE SIGNATURE AND TITLE OF THE PERSON SIGNING THE TRANSFER FORM MUST BE VERIFIED BY BENEFICIARY'S BANK. APPLICANT SHALL PAY OUR TRANSFER FEE OF ¼ OF 1% OF THE TRANSFER AMOUNT (MINIMUM US $250.00) UNDER THIS LETTER OF CREDIT.

IF THE ORIGINAL OF THIS STANDBY LETTER OF CREDIT NO. IS LOST, STOLEN OR DESTROYED, WE WILL ISSUE YOU A "CERTIFIED TRUE COPY" OF THIS STANDBY LETTER OF CREDIT NO UPON OUR RECEIPT OF YOUR INDEMNITY LETTER TO SILICON VALLEY BANK WHICH WILL BE SENT TO YOU UPON OUR RECEIPT OF YOUR WRITTEN REQUEST THAT THIS STANDBY LETTER OF CREDIT NO IS LOST, STOLEN OR DESTROYED. IF THE OIRIGNAL OF THIS STANDBY LETTER OF CREDIT NO IS MUTILATED, WE WILL ISSUE YOU A REPLACEMENT STANDBY LETTER OF CREDIT WITH THE SAME NUMBER, DATE AND TERMS AS THE ORIGINAL UPON OUR RECEIPT OF THE MUTILATED STANDY LETTER OF CIREDIT.

THIS STANDBY LETTER OF CREDIT MAY ALSO BE CANCELLED PRIOR TO ANY PRESENT OR FUTURE EXPIRATION DATE, UPON RECEIPT BY BANK BY OVERNIGHT COURIER OR REGISTERED MAIL (RETURN RECEIPT REQUESTED) OF THE ORIGINAL STANDBY LETTER OF CREDIT AND ALL AMENDMENTS, IF ANY, FROM BENEFICIARY TOGETHER WITH A STATEMENT SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE BENEFICIARY ON COMPANY LETTERHEAD STATING THAT THIS STANDBY LETTER OF CREDIT IS NO LONGER REQUIRED AND IS BEING RETURNED FOR CANCELLATION.

DRAFT(S) AND DOCUMENTS MUST INDICATE THE NUMBER AND DATE OF THIS LETTER OF CREDIT.

ALL DEMANDS FOR PAYMENT SHALL BE MADE BY PRESENTATION OF THE ORIGINAL APPROPRIATE DOCUMENTS ON A BUSINESS DAY AT OUR OFFICE (THE "BANK'S OFFICE") AT: [ADDRESS], ATTENTION: STANDBY LETTER OF CREDIT NEGOTIATION SECTION.

FACSIMILE PRESENTATIONS ARE PERMITTED. SHOULD BENEFICIARY WISH TO MAKE PRESENTATIONS UNDER THIS LETTER OF CREDIT ENTIRELY BY FACSIMILE TRANSMISSION IT NEED NOT TRANSMIT THIS LETTER OF CREDIT AND AMENDMENT(S), IF ANY. EACH FACSIMILE TRANSMISSION SHALL BE MADE AT: [TELEPHONE CONTACT NUMBER], ATTENTION: STANDBY LETTER OF CREDIT NEGOTIATION SECTION WITH ORIGINALS TO FOLLOW BY OVERNIGHT COURIER SERVICE; PROVIDED, HOWEVER, THE BANK WILL DETERMINE HONOR OR DISHONOR ON THE BASIS OF PRESENTATION BY FACSIMILE ALONE, AND WILL NOT EXAMINE THE ORIGINALS. IN ADDITION, ABSENCE OF THE AFORESAID TELEPHONE ADVICE SHALL NOT AFFECT OUR OBLIGATION TO HONOR ANY DRAW REQUEST.

IF DEMAND FOR PAYMENT IS PRESENTED BY 10 AM [INDICATE TIME ZONE] TIME AND CONFORMS TO THE TERMS AND CONDITIONS OF THIS LETTER OF CREDIT, PAYMENT SHALL BE MADE BY BANK TO YOU OF THE AMOUNT SPECIFIED IN IMMEDIATELY AVAILABLE FUNDS NOT LATER THAN THE SECOND FOLLOWING BUSINESS DAY. IF DEMAND FOR PAYMENT IS PRESENTED BY YOU HEREUNDER AFTER THE TIME SPECIFIED ABOVE, AND CONFORMS TO THE TERMS AD CONDITIONS OF THIS LETTER OF CREDIT, PAYMENT SHALL BE MADE TO YOU OF THE AMOUNT SPECIFIED IN IMMEDIATELY AVAIALBLE FUNDS NO LATER THAN THE THIRD FOLLOWING BUSINESS DAY.

WE HEREBY AGREE WITH THE BENEFICIARY THAT DRAFTS DRAWN UNDER AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THIS LETTER OF CREDIT WILL BE DULY HONORED UPON PRESENTATION TO US ON OR BEFORE THE EXPIRATION DATE OF THIS LETTER OF CREDIT OR ANY AUTOMATICALLY EXTENDED EXPIRATION DATE.

IF ANY INSTRUCTIONS ACCOMPANYING A DRAWING UNDER THIS LETTER OF CREDIT REQUEST THAT PAYMENT IS TO BE MADE BY TRANSFER TO YOUR ACCOUNT WITH ANOTHER BANK, WE WILL ONLY EFFECT SUCH PAYMENT BY FED WIRE TO A U.S. REGULATED BANK, AND WE AND/OR SUCH OTHER BANK MAY RELY ON AN ACCOUNT NUMBER SPECIFIED IN SUCH INSTRUCTIONS EVEN IF THE NUMBER IDENTIFIES A PERSON OR ENTITY DIFFERENT FROM THE INTENDED PAYEE.

THIS LETTER OF CREDIT IS SUBJECT TO THE INTERNATIONAL STANDBY PRACTICES (ISP98), INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 590.

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER

EXHIBIT A

DATE: _____ REF. NO. _____

AT SIGHT OF THIS DRAFT

PAY TO THE ORDER OF _____ US$_____

US DOLLARS _____

DRAWN UNDER _____ BANK, [ADDRESS], STANDBY
LETTER OF CREDIT NUMBER NO. _____ DATED _____

TO: BANK
[ADDRESS]

_____
(BENEFICIARY'S NAME)

.....
Authorized Signature

GUIDELINES TO PREPARE THE DRAFT

1. DATE: ISSUANCE DATE OF DRAFT.
2. REF. NO.: BENEFICIARY'S REFERENCE NUMBER, IF ANY.
3. PAY TO THE ORDER OF: NAME OF BENEFICIARY AS INDICATED IN THE L/C (MAKE SURE BENEFICIARY ENDORSES IT ON THE REVERSE SIDE).
4. US$: AMOUNT OF DRAWING IN FIGURES.
5. USDOLLARS: AMOUNT OF DRAWING IN WORDS.
6. LETTER OF CREDIT NUMBER: BANK'S STANDBY L/C NUMBER THAT PERTAINS TO THE DRAWING.
7. DATED: ISSUANCE DATE OF THE STANDBY L/C.
8. BENEFICIARY'S NAME: NAME OF BENEFICIARY AS INDICATED IN THE L/C.
9. AUTHORIZED SIGNATURE: SIGNED BY AN AUTHORIZED SIGNER OF BENEFICIARY.

IF YOU HAVE QUESTIONS RELATED TO THIS STANDBY LETTER OF CREDIT PLEASE CONTACT US AT .

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER _____

EXHIBIT B
TRANSFER FORM

DATE: _____

TO: BANK
[ADDRESS]

RE: IRREVOCABLE STANDBY LETTER OF CREDIT

NO. _____ ISSUED BY
ATTN: INTERNATIONAL DIVISION.
STANDBY LETTERS OF CREDIT

L/C AMOUNT: _____

GENTLEMEN:

FOR VALUE RECEIVED, THE UNDERSIGNED BENEFICIARY HEREBY IRREVOCABLY TRANSFERS TO:

_____
(NAME OF TRANSFEREE)

_____
(ADDRESS)

ALL RIGHTS OF THE UNDERSIGNED BENEFICIARY TO DRAW UNDER THE ABOVE LETTER OF CREDIT UP TO ITS AVAILABLE AMOUNT AS SHOWN ABOVE AS OF THE DATE OF THIS TRANSFER.

BY THIS TRANSFER, ALL RIGHTS OF THE UNDERSIGNED BENEFICIARY IN SUCH LETTER OF CREDIT ARE TRANSFERRED TO THE TRANSFEREE. TRANSFEREE SHALL HAVE THE SOLE RIGHTS AS BENEFICIARY THEREOF, INCLUDING SOLE RIGHTS RELATING TO ANY AMENDMENTS, WHETHER INCREASES OR EXTENSIONS OR OTHER AMENDMENTS, AND WHETHER NOW EXISTING OR HEREAFTER MADE. ALL AMENDMENTS ARE TO BE ADVISED DIRECTLY TO THE TRANSFEREE WITHOUT NECESSITY OF ANY CONSENT OF OR NOTICE TO THE UNDERSIGNED BENEFICIARY.

THE ORIGINAL OF SUCH LETTER OF CREDIT IS RETURNED HEREWITH, AND WE ASK YOU TO ENDORSE THE TRANSFER ON THE REVERSE THEREOF, AND FORWARD IT DIRECTLY TO THE TRANSFEREE WITH YOUR CUSTOMARY NOTICE OF TRANSFER.

SINCERELY,

_____
(BENEFICIARY'S NAME)

_____
(SIGNATURE OF BENEFICIARY)

_____
(NAME AND TITLE)

SIGNATURE AUTHENTICATED

The name(s), title(s), and signature(s) conform to that/those on file with us for the company and the signature(s) is/are authorized to execute this instrument.

_____
(Name of Bank)

_____
(Address of Bank)

_____
(City, State, ZIP Code)

_____
(Authorized Name and Title)

_____
(Authorized Signature)

_____
(Telephone number)

EXHIBIT 9

LANDLORD'S SERVICES

1. Landlord shall provide cleaning of the Premises and the Common Areas in a manner substantially comparable to other comparable buildings in the East Cambridge/Kendall Square area.

2. Extermination of all public and tenanted areas of the Building as reasonably necessary.

3. Trash removal in accordance with Section 7.7 of the Lease. Such trash removal shall not include removal of excessive trash generated when an occupant moves in or out of the Building, when equipment is discarded, when files are purged, or construction related trash and debris. If Landlord's trash removal company or any applicable Legal Requirement requires that any substances in the Premises be disposed of separately from ordinary trash, Tenant shall make arrangements at Tenant's expense for such disposal directly with a qualified and licensed disposal company approved by Landlord at a lawful disposal site.

4. Snow and ice removal from the sidewalks and driveways appurtenant to the Building as reasonably necessary for the normal operation of the Building.

5. Staff the Building's front desk during certain hours as reasonably determined by Landlord.

6. Reasonable passenger and freight elevator service.

7. With respect to those Common Areas that consist of conference, fitness or kitchenette facilities, Landlord's sole obligation with respect to such Common Areas is to provide only the cleaning of such Common Areas, as identified above, and hot and cold water to those areas served by plumbing, and electricity and HVAC service in accordance with and subject to Article 7 of this Lease. Notwithstanding anything set forth herein to the contrary, Tenant agrees that Landlord is not providing any scheduling or other services related to the programming or use of such Common Areas.

EXHIBIT 10

TENANT'S INSURANCE

Tenant shall procure, pay for and keep in force throughout the Term (and for so long thereafter as Tenant remains in occupancy of the Premises, the following insurance:

(a) Commercial general liability insurance, on a primary and non-contributory basis, insuring Tenant on an occurrence basis against all claims and demands for bodily injury (including sickness, disease, and death) or damage to property (including products and completed operations and contractual liability coverage) which may be claimed to have occurred from and after the time any of the Tenant Parties shall first enter the Premises, of not less than One Million Dollars ($1,000,000) per occurrence, Three Million Dollars ($3,000,000) aggregate, and from time to time thereafter shall be not less than such higher amounts, if procurable, as may be reasonably required by Landlord. Tenant shall also carry umbrella liability coverage on a follow form basis in an amount of no less than Five Million Dollars ($5,000,000). Such policy shall also include contractual liability coverage covering Tenant's liability assumed under this Lease, including Tenant's indemnification obligations. Such insurance policy(ies) shall name Landlord, Landlord's managing agent and persons claiming by, through or under them, if any, as additional insureds.

(b) A policy of fire, vandalism, malicious mischief, and extended coverage (so-called special cause of loss property insurance or its equivalent), on a primary and non-contributory basis, in an amount equal to one hundred percent (100%) of the replacement cost insuring (i) all items or components of Alterations (collectively, the "**Tenant-Insured Improvements**"), and (ii) Tenant's furniture, equipment, fixtures and property of every kind, nature and description related or arising out of Tenant's leasehold estate hereunder, which may be in or upon the Premises or the Building (collectively, "**Tenant's Property**"). Such insurance shall insure the interests of both Landlord and Tenant as their respective interests may appear from time to time.

(c) A policy of business interruption insurance throughout the Term sufficient to cover at least twelve (12) months of Rent due hereunder and Tenant's business losses during such 12-month period.

(d) Such additional insurance as may be necessary to comply with any Legal Requirements or as may be reasonably required by Landlord.

(e) During periods when any Alterations are being performed, Tenant shall maintain or cause to be maintained so-called special cause of loss property insurance or its equivalent and/or Builders Risk Insurance on 100% replacement cost coverage basis, including hard and soft costs coverages. Such insurance shall protect and insure Landlord, other Landlord Parties, Tenant and Tenant's contractors, as their interests may appear, against loss or damage by fire, water damage, vandalism and malicious mischief, and such other risks as are customarily covered by so-called special cause of loss property/ builders risk coverage or its equivalent, and shall otherwise include no less than the coverage terms required for property insurance described above.

The insurance required pursuant to this Exhibit 10 (collectively, "**Tenant's Insurance Policies**") shall be effected with insurers approved by Landlord, with a rating of not less than "**A-VII**" in the current Best's Insurance Reports, and authorized to do business in the Commonwealth of Massachusetts under valid and enforceable policies. Tenant's Insurance Policies shall each provide that it shall not be canceled or modified without at least thirty (30) days' prior written notice to each insured named therein. Tenant's Insurance Policies may include deductibles in an amount no greater than the greater of $25,000. On or

before the date on which any of the Tenant Parties shall first enter the Premises and thereafter not less than fifteen (15) days prior to the expiration date of each expiring policy, Tenant shall deliver to Landlord binders of Tenant's Insurance Policies issued by the respective insurers setting forth in full the provisions thereof together with evidence satisfactory to Landlord of the payment of all premiums for such policies. In the event of any claim, and upon Landlord's request, Tenant shall deliver to Landlord complete copies of Tenant's Insurance Policies. Upon request of Landlord, Tenant shall deliver to any Mortgagee copies of the foregoing documents.

EXHIBIT 11

RULES AND REGULATIONS

1. Tenants and their employees, shall not in any way obstruct the sidewalks, halls, stairways, or elevators of the Building, and shall use the same only as a means of passage to and from their respective offices. Tenants will not place or allow to be placed in the Building corridors or public stairways any waste paper, dust, refuse, or anything whatever. At no time shall tenants permit their employees to loiter in Common Areas or elsewhere in and about the Building or the Land.

2. No signs, advertisements or notices shall be inscribed, painted or affixed where they can be seen from the outside the leased premises without prior written consent of Building management. Management reserves the right to prohibit the posting of any sign which it finds reasonably objectionable and to remove any which has already been placed, at the tenant's expense.

3. All contractors, contractor's representatives, and installation technicians performing work in the Building shall be subject to Landlord's prior approval which shall not be unreasonably withheld or delayed and shall be required to comply with Landlord's standard rules, regulations, policies and procedures, as the same may be revised from time to time. Tenants shall be solely responsible for complying with all applicable laws, codes and ordinances pursuant to which said work shall be performed.

4. All electric and telephone wiring shall be installed as directed by Landlord. No boring or cutting for wires shall be executed and no new pipes or wires shall be introduced without the prior written consent of Landlord.

5. Tenants shall not install or use any machinery in the demised premises which may cause any noise, jar, or tremor to the floors or walls, or which by its weight might damage the floors of the Building.

6. The roof terrace may only be used during normal business hours. No music, entertainment or loud noise shall be permitted on the roof terrace without Landlord's approval. Tenant may not place any furniture or landscaping on the roof terrace. Tenant shall not cause any projectile to be thrown or dropped from the roof terrace. Landlord may prescribe additional rules and regulations with respect to the roof terrace in its sole discretion.

7. All furniture, safes, equipment and freight shall be moved into and out of the Building only at certain hours approved by and under the supervision of Landlord and according to these rules and regulations. All damage to the Building caused by installing or removing any safe, furniture; equipment or other property shall be repaired at the expense of the Tenant. Landlord will not be responsible for loss or damage to any furniture, equipment or freight from any cause.

8. Corridor doors, when not in use, shall be kept closed.

9. Tenant, Tenant's agents and employees shall not: play any musical instruments, other than radio and television; make or permit any improper noises in the Building; interfere with other lessees or those having business with them.

10. No animals, except service animals, shall be brought into or kept in, on or about the Premises.

11. The restroom fixtures shall be used only for the purpose for which they were constructed and no rubbish, ashes, or other substances of any kind shall be thrown into them. Tenant will bear the expense of any damage resulting from misuse.

12. Tenant shall not place any additional lock or locks on any exterior door in the Premises or Building or on any door in the Building core within the Premises, including doors providing access to the telephone and electric closets and the slop sink, without Landlord's prior written consent. A reasonable number of keys to the locks on the doors in the Premises shall be furnished by Landlord to Tenant at the cost of Tenant, and Tenant shall not have any duplicate keys made. All keys shall be returned to Landlord at the expiration or earlier termination of this Lease.

13. The directory board in the entrance lobby of the Building is provided for the exclusive display of the name and location of each tenant at the tenant's expense. Landlord reserves the right to allocate space in the directory and to design style of such identification.

14. Landlord reserves the right to exclude or expel from the Building any persons who, in the judgment of Landlord, is intoxicated under the influence of liquor or drugs, or shall do any act in violation of the rules and regulations of the Building.

15. Rooms used in common by tenants shall be subject to such regulations as are posted therein.

16. Landlord reserves the right to close and keep locked all entrance and exit doors of the Building during the hours Landlord may deem advisable for the adequate protection of the property. Use of the Building and the leased premises before 8 AM or after 6 PM, or any time during Sundays or legal holidays shall be allowed only to persons with a key/card key to the premises or guests accompanied by such persons. At these times, all occupants and their guests must sign in at the concierge when entering and exiting the building. Any persons found in the Building after hours without such keys/card keys are subject to the surveillance of building staff.

17. Landlord shall have the right to prohibit any advertising by any tenant which, in Landlord's commercially reasonable opinion, tends to impair the reputation of the Building or its desirability as a Building for offices, and upon written notice from Landlord, such tenant shall refrain from or discontinue such advertising.

18. No tenant will install blinds, shades, awnings, or other form of inside or outside window covering, or window ventilators or similar devices without the prior consent of Landlord. Tenant will not interfere with or obstruct any perimeter heating, air conditioning or ventilating units.

19. Tenants shall give Landlord prompt notice of any accidents to or defects in water pipes, gas pipes, electric lights and fixtures, heating apparatus, or any other service equipment.

20. Tenants shall not perform improvements or alterations within the Building or their premises, if the work has the potential of disturbing the fireproofing which has been applied on the surfaces of structural steel members, without the prior written consent of Landlord.

21. Tenants shall not take any action which would violate Landlord's labor contracts affecting the Building or which would cause any work stoppage, picketing, labor disruption or dispute, or any interference with the business of Landlord or any other tenant or occupant of the Building or with the right and privileges of any person lawfully in the Building. Tenants shall take any actions necessary to resolve any such work stoppage, picketing, labor disruption, dispute or interference and shall have pickets removed and, at the request of Landlord, immediately terminate at any

time any construction work being performed in the Premises giving rise to such labor problems, until such time as Landlord shall have given its written consent for such work to resume. Tenants shall have no claim for damages of any nature against Landlord in connection therewith, nor shall the date of the commencement of the Term be extended as a result thereof.

22. The work of cleaning personnel shall not be hindered by tenants after 5:30 PM, and such cleaning work may be done at any time when the offices are vacant. Windows, doors and fixtures may be cleaned at any time. Tenants shall provide adequate waste and rubbish receptacles necessary to prevent unreasonable hardship to Landlord regarding cleaning service.

23. Tenants shall not install, operate or maintain in the Premises or in any other area of the Building, any electrical equipment which does not bear the U/L (Underwriters Laboratories) seal of approval, or which would overload the electrical system or any part thereof beyond its capacity for proper, efficient and safe operation as determined by Landlord, taking into consideration the overall electrical system and the present and future requirements therefore in the Building. Tenants shall not furnish any cooling or heating to the Premises, including the use of any electronic or gas heating devices, without Landlord's prior written consent. Tenants shall not use more than its proportionate share of telephone lines available to service the Building.

24. Tenants shall not operate or permit to be operated on the Premises any coin or token operated vending machine or similar device (including telephones, lockers, toilets, scales, amusement devices and machines for sale of beverages food, candy, cigarettes or other goods), except for those vending machines or similar devices which are for the sole and exclusive use of tenant's employees, and then only if such operation does not violate the lease of any other lessee of the Building.

25. Bicycles and other vehicles are not permitted inside or on the walkways outside the Building, except in those areas specifically designated by Landlord for such purposes. Landlord shall provide bicycle racks in the garage.

26. Landlord may from time to time adopt appropriate systems and procedures for the security or safety of the Building, its occupants, entry and use, or its contents. Tenant, Tenant's agents, employees, contractors, guests and invitees shall comply with Landlord's reasonable requirements relative thereto.

27. Tenants shall carry out Tenant's permitted repair, maintenance, alterations, and improvements in the Premises only during times agreed to in advance by Landlord and in a manner which will not interfere with the rights of other lessees in the Building.

28. Canvassing, soliciting, and peddling in or about the Building is prohibited. Tenants shall cooperate and use best efforts to prevent the same.

29. At no time shall Tenants permit or shall Tenant's agents, employees, contractors, guests, or invitees smoke in any Common Area of the Building, unless such Common Area has been declared a designated smoking area by Landlord.

30. Tenant shall keep neat and clean, and not leave papers or other personal property, in any shared conference, kitchen or fitness facilities.

31. All deliveries to or from the Premises shall be made only at such times, in the areas and through the entrances and exits designated for such purposes by Landlord. Tenant shall not permit the process of receiving deliveries to or from the Premises outside of said areas or in a manner which may interfere with the use by any other lessee of its premises or of any Common Areas, any pedestrian use of such area, or any use which is inconsistent with good business practice.

EXHIBIT 12

TENANT'S SIGNAGE

Tenant shall have the right to building standard signage on the lobby directory on the first floor of the Building, directional signage on its floor (both at Landlord cost), and at the main entrance to the Premises (at Tenant's cost), all subject to Landlord's prior written approval.

EXHIBIT 13

FORM OF SNDA FOR MASTER LEASE

SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT

THIS SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AGREEMENT (this "**Agreement**") is made and entered into as of the day of , 201 by and between **STOKE THERAPEUTICS**, **INC.,** a Delaware corporation with an address of 3 Preston Court, Suite 102, Bedford, MA 01730 ("**Subtenant**"), **MIT 139 MAIN STREET FEE OWNER LLC**, a Massachusetts limited liability company with an address c/o MIT Investment Management Company, One Broadway, Suite 09-200, Cambridge, MA 02142 ("**Master Lessor**") and **MIT 139 MAIN STREET LEASEHOLD LLC**, a Massachusetts limited liability company with an address c/o MIT Investment Management Company, One Broadway, Suite 09-200, Cambridge, MA 02142 ("**Master Tenant**").

W I T N E S S E T H

REFERENCE is hereby made to that certain Master Lease Agreement dated September 29, 2017 by and between Master Lessor, as landlord, and Master Tenant, as tenant (the "**Master Lease**") with respect to the land and improvements thereon commonly known as 139 Main Street, Cambridge, Massachusetts (the "**Property**"). A notice of lease with respect to the Master Lease (the "**Notice of Master Lease**") was recorded with the Middlesex South Registry of Deeds in Book , Page .

REFERENCE is also hereby made to that certain lease dated by and between Master Tenant, as landlord, and Subtenant, as tenant (the "**Sublease**"), with respect to a portion of the Property consisting of approximately 2,485 rentable square feet on the fourth (4th) floor (the "**Subleased Premises**") of the building located on the Property;

WHEREAS, Master Tenant and Subtenant have agreed to subordinate the Sublease to the Master Lease; and

WHEREAS, subject to the terms and conditions hereinafter set forth, Master Lessor has agreed (a) to recognize the rights of Subtenant under the Sublease, and (b) not to disturb Subtenant's use and enjoyment of the Subleased Premises.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Incorporation of Recitals; Capitalized Terms. The foregoing recitals are hereby incorporated by reference. All capitalized terms not otherwise defined herein shall have the meanings ascribed to them as set forth in the Master Lease.

2. Subordination. The Sublease is and at all times shall be subject and subordinate to the Master Lease and all amendments and modifications thereof, with the same force and effect as if the Sublease had been executed and delivered subsequent to the execution and delivery of the Master Lease and the recording of the Notice of Master Lease.

3. Subtenant Not To Be Disturbed. So long as Subtenant is not in default (beyond any period given Subtenant by the terms of the Sublease to cure such default) in the payment of rent or additional rent or of any of the terms, covenants or conditions of the Sublease on Subtenant's part to be performed, (a) Subtenant's possession of the Subleased Premises, and its rights and privileges under the Sublease,

including but not limited to any extension or renewal rights, if any, shall not be diminished or interfered with by Master Lessor, and (b) Master Lessor will not join Subtenant as a party defendant in any action or proceeding terminating Master Tenant's possession of the Property unless such joinder is necessary to terminate such possession and then only for such purpose and not for the purpose of terminating the Sublease (and Master Tenant will hold Subtenant harmless from any costs including legal fees associated with such joinder).

4. Tenant to Attorn to Master Lessor. If the Master Lease is terminated pursuant to the terms thereof, or if Master Tenant rejects the Sublease in the course of a bankruptcy proceeding, or if Master Lessor shall succeed to the interest of Master Tenant in and to the Sublease in any other manner, then (a) the Sublease shall continue in full force and effect as a direct lease between Master Lessor and Subtenant (subject to Section 8 below); provided, however, that Master Lessor and its assigns shall not be (i) liable for any misrepresentation, act or omission of Master Tenant, provided, however, that the foregoing shall not release Master Lessor from liability for any default of its obligations under the Sublease continuing after the date on which Master Lessor succeeds to Master Tenant's interest thereunder, including without limitation any maintenance obligations, (ii) subject to any counterclaim, demand or offset which Subtenant may have against Master Tenant; (iii) liable for the return of any security deposit or letter of credit not actually received by Master Lessor and with respect to which Subtenant agrees to look solely to Master Tenant for refund or reimbursement; (iv) unless delivered by Master Tenant to Master Lessor, bound by any advance payment of rent or additional rent or any other sums made by Subtenant to Master Tenant, except for rent or additional rent applicable to the then-current month; (v) obligated to cure any defaults under the Sublease of Master Tenant which occurred prior to the termination of the Master Lease, provided, however, that the foregoing shall not release Master Lessor from liability for any default of its obligations under the Sublease continuing after the date on which Master Lessor succeeds to Master Tenant's interest thereunder, including without limitation any maintenance obligations; or (vi) bound by any covenant to undertake, complete or pay for any improvements to the Subleased Premises; and (b) Subtenant shall attorn to Master Lessor as its landlord, said attornment to be effective and self-operative without the execution of any further instruments. Master Lessor and Subtenant each hereby agrees to execute an instrument in form and substance reasonably acceptable to both parties acknowledging the continuation of the Sublease for the Subleased Premises as a direct lease for the Subleased Premises on the terms and conditions set forth in this Agreement. In addition, Subtenant shall execute and deliver, upon the request of Master Lessor, an instrument or certificate regarding the status of the Sublease consisting of statements, if true (and if not true, specifying in what respect), in the case of the Sublease by Subtenant (A) that the Sublease is in full force and effect, (B) the amounts and date through which rentals have been paid, (C) the commencement date, rent commencement date and duration of the term of the Sublease, (D) that no default, or state of facts, which with the passage of time, or notice, or both, would constitute a default, exists on the part of either party to the Sublease, and (E) the dates on which payments of additional rent, if any, are due under the Sublease.

5. Sublease Amendments. Master Lessor shall not be bound by any amendment to the Sublease made after the date of this Agreement unless Master Lessor shall have consented thereto in writing. Such consent of Master Lessor may be withheld by Master Lessor in its sole and absolute discretion if such amendment (a) reduces the rent payable under the Sublease, (b) provides for any expansion rights, (c) extends the term of the Sublease in addition to Subtenant's current right(s) to extend the term under the Sublease, if any. Any such amendment made after the date of this Agreement without Master Lessor's consent shall not be binding on Master Lessor.

6. Master Lessor's Right to Notice and Cure. Subtenant covenants and agrees to: (a) concurrently give Master Lessor the same default and/or termination notices given to Master Tenant under the Sublease at the following addresses until otherwise specified in writing by Master Lessor: MIT 139 Main Street Fee Owner LLC, c/o MIT Investment Management Company, One Broadway, Suite 09-200, Cambridge, MA 02142, Attention: Managing Director of Real Estate, with copies to MIT Investment Management Company, One Broadway, Suite 09-200, Cambridge, MA 02142, Attention: Director of Real Estate Legal Services, and Jones Lang LaSalle Americas, Inc., One Broadway, 6th Floor, Cambridge, MA 02142, Attention: Group Manager; (b) provide Master Lessor with at least ten (10) days plus the number of days (and the same opportunities and rights) as are available to Master Tenant under the Sublease to cure any of Master Tenant's defaults thereunder; and (c) accept Master Lessor's curing of any of Master Tenant's defaults under the Sublease as performance by Master Tenant thereunder.

7. Amendments. This Agreement may not be waived, changed, or discharged orally, but only by agreement in writing and signed by Master Lessor, Master Tenant and Subtenant, and any oral waiver, change, or discharge of this Agreement or any provisions hereof shall be without authority and shall be of no force and effect.

8. Revisions to Sublease. Notwithstanding anything contained in this Agreement or the Sublease to the contrary, in the event that the Master Lease is terminated pursuant to the terms thereof, or if Master Tenant rejects the Sublease in the course of a bankruptcy proceeding, (a) as of the date of such termination or rejection, Master Lessor and Master Lessor's successors and assigns shall have no liability to Subtenant with respect to any representations and warranties on the part of "Landlord" contained in the Sublease (provided that the foregoing shall in no event relieve Master Tenant of any liability to Subtenant with respect to such representations and warranties), and (b) Master Lessor shall have no liability or obligations pursuant to the brokerage provision of the Sublease.

9. Security Deposit. If the Master Lease is terminated pursuant to the terms thereof, or if Master Tenant rejects the Sublease in the course of a bankruptcy proceeding, then Master Tenant shall deliver to Master Lessor the cash security deposit and/or the original letter of credit (including any amendments thereto) and an executed transfer form in the form required by the issue of such letter of credit, if any has been delivered by Subtenant to Master Tenant pursuant to the Sublease. In the event that Master Tenant fails to deliver the same, Subtenant shall, at Subtenant's sole cost and expense, use commercially reasonably efforts (including, without limitation, the payment of any commercially reasonable fees required by the issuer of any such letter of credit and the execution of such reasonable documents as Master Lessor may deem necessary) in order to (a) cause Master Tenant to deliver to Master Lessor any cash security deposit, and (b) cause the original letter of credit issued to Master Tenant to be (i) assigned to Master Lessor or (ii) terminated or canceled. Master Tenant hereby consents to Subtenant's undertaking the actions described in the immediately preceding sentence and waives any claim Master Tenant may have against Subtenant arising from Subtenant's compliance with the requirements of this Section 9. If such letter of credit is so terminated or canceled, Subtenant shall deliver to Master Lessor a new original letter of credit naming Master Lessor as beneficiary and otherwise meeting the requirements set forth in the Sublease.

10. Relation between Master Lessor and Master Tenant. Notwithstanding anything to the contrary contained herein, if, *at the time* that Master Lessor succeeds to the interest of Master Tenant as landlord under the Sublease, Master Tenant controls, is controlled by or is under common control with Master Lessor, then, in such event, Master Lessor agrees that no term, covenant or condition of this Agreement shall be interpreted or enforced by Master Lessor in any manner that would have the effect of amending

or modifying the Sublease, releasing Master Lessor from any obligation under the Sublease or otherwise reducing the obligations of the landlord thereunder or increasing the obligations of Tenant thereunder (for example, Section 8(a) above and the second sentence of Section 9 shall not be enforced by Master Lessor in such situation).

11. Miscellaneous. This Agreement shall be deemed to have been executed and delivered within the Commonwealth of Massachusetts, and the rights and obligations of the parties hereunder shall be construed and enforced in accordance with, and governed by, the laws of the Commonwealth of Massachusetts without regard to the laws governing conflicts of laws. This Agreement will be executed by each party in recordable form and shall at no expense to Subtenant be recorded by Master Tenant in all places necessary to provide legal notice of this Agreement, Subtenant hereby agreeing to reasonably cooperate with Master Tenant in connection therewith, including without limitation providing such evidence of authority as is required or customary in connection with such recording. If any term of this Agreement or the application thereof to any person or circumstances shall be invalid and unenforceable, the remaining provisions of this Agreement, the application or such term to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected. This Agreement is binding upon and shall inure to the benefit of Master Lessor, Master Tenant and Subtenant, and their respective successors and assigns. Each party has cooperated in the drafting and preparation of this Agreement and, therefore, in any construction to be made of this Agreement, the same shall not be construed against either party. In the event of litigation relating to this Agreement, the prevailing party shall be entitled to reimbursement from the other party of its reasonable attorneys' fees and costs. This Agreement constitutes the entire agreement of the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions, and may not be amended, waived, discharged or terminated except by a written instrument signed by all the parties hereto. This Agreement may be executed in two or more counterparts which, when taken together, shall constitute one and the same original.

[Signatures on following page]

IN WITNESS WHEREOF, the parties hereto have each caused this Agreement to be executed as an instrument under seal as of the date first above written.

MASTER LESSOR:

MIT 139 MAIN STREET FEE OWNER LLC,
a Massachusetts limited liability company

By: MIT Cambridge Real Estate LLC, its manager

By: _____
Name:
Title:

MASTER TENANT:

MIT 139 MAIN STREET LEASEHOLD LLC,
a Massachusetts limited liability company

By: MIT Cambridge Real Estate LLC, its manager

By: _____
Name:
Title:

SUBTENANT:

STOKE THERAPEUTICS, INC., a Delaware corporation

By: _____
Name:
Title:

COMMONWEALTH OF MASSACHUSETTS

Middlesex, ss. _____, 20____

On this day of , 201 before me, the undersigned notary public, personally appeared , proved to me through satisfactory evidence of identification, which was personal knowledge of the identity of the signatory, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntarily for its stated purpose as for MIT Cambridge Real Estate LLC, as manager of MIT 139 Main Street Fee Owner LLC, a limited liability company.

Notary Public:
My Commission Expires:

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20____

On this day of , 201 before me, the undersigned notary public, personally appeared , proved to me through satisfactory evidence of identification, which was personal knowledge of the identity of the signatory, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntarily for its stated purpose as for MIT Cambridge Real Estate LLC, as manager of MIT 139 Main Street Leasehold LLC, a limited liability company.

Notary Public:
My Commission Expires:

COMMONWEALTH OF MASSACHUSETTS

_____, ss. _____, 20____

On this day of , 201 before me, the undersigned notary public, personally appeared , proved to me through satisfactory evidence of identification, which was personal knowledge of the identity of the signatory, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/she signed it voluntarily for its stated purpose as , for Stoke Therapeutics, Inc., a Delaware corporation.

_____

_____

Notary Public:
My Commission Expires:

MASTER LEASE AGREEMENT

139 MAIN STREET

CAMBRIDGE, MASSACHUSETTS

by and between

MIT 139 MAIN STREET FEE OWNER LLC,

as Landlord

and

MIT 139 MAIN STREET LEASEHOLD LLC,

as Tenant

Dated as of September 29, 2017

MASTER LEASE AGREEMENT

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MASTER LEASE AGREEMENT

This MASTER LEASE AGREEMENT (this "**Lease**") dated as of September 29, 2017 (the "**Commencement Date**") is made by and between MIT 139 MAIN STREET FEE OWNER LLC, a Massachusetts limited liability company with its principal office c/o MIT Investment Management Company, 238 Main Street, Suite 200, Cambridge, Massachusetts 02142, as landlord ("**Landlord**"), and MIT 139 MAIN STREET LEASEHOLD LLC, a Massachusetts limited liability company with its principal office c/o MIT Investment Management Company, 238 Main Street, Suite 200, Cambridge, MA 02142, as tenant ("**Tenant**").

ARTICLE I.
DEFINITIONS

In this Lease, the following words shall have the following meanings, respectively:

1.1 "**Abandonment Fee**" shall have the meaning set forth in Section 18.1.

1.2 "**Acquisition Date**" shall have the meaning set forth in Section 19.1(c).

1.3 "**Additional Rent**" shall mean all amounts due and payable by Tenant to Landlord under this Lease, other than Base Rent.

1.4 "**Affiliate**" shall mean any Person that is a partner or a member with or in, or a beneficiary or shareholder of, Tenant, or which directly or indirectly owns or controls Tenant, or any partner, member or beneficiary or shareholder of any Person which directly or indirectly owns or controls Tenant; or any Person owned or controlled, directly or indirectly, by Tenant or by any of the partners, members, beneficiaries or shareholders of Tenant or under common ownership of any type with Tenant.

1.5 "**Approval Instruments**" shall have the meaning set forth in Section 5.8(b).

1.6 "**Approvals**" shall mean any permits, approvals, licenses, orders, conditions, decisions, rezonings, transfers of development rights to or from the Premises, actions of any governmental authority, or similar governmental or quasi-governmental rights and privileges allowing or facilitating any use, operation, construction, reconstruction or maintenance consistent with the terms of this Lease.

1.7 "**Appurtenances**" shall mean any and all property or other rights appurtenant to the Land or relating to the use, occupancy and enjoyment of the Land and/or the Improvements.

1.8 "**Appurtenant Grant**" shall have the meaning set forth in Section 13.4.

1.9 "**Assignment**" shall have the meaning set forth in Section 19.3(a)(i).

1.10 "**Assignment Notice**" shall have the meaning set forth in Section 12.2(a).

1.11 "**Award**" shall have the meaning set forth in Section 10.2.

1.12 "**Bankruptcy Laws**" shall have the meaning set forth in Section 11.1(d).

1.13 "**Base Interest Rate**" shall mean [redacted] over the prime rate of interest of Bank of America, N.A., or its successor, during the respective periods of calculation of such interest hereunder.

1.14 "**Base Rent**" shall mean the components of Rent which are the fixed annual rental amounts determined in accordance with Section 4.1.

1.15 "**Business Day**" shall mean any day which is not a Saturday or Sunday or a public holiday under the laws of the United States of America or the Commonwealth of Massachusetts.

1.16 "**Claims**" shall have the meaning set forth in Section 7.4(c).

1.17 "**Clearing Costs**" shall mean the reasonable costs and expenses of removing any remaining Improvements and restoring the Premises to a safe and cleared and safe condition and at a grade approximately level with abutting land.

1.18 "**Commencement Date**" shall have the meaning set forth in the first unnumbered paragraph at the beginning of this Lease.

1.19 "**Contract Assignment**" shall have the meaning set forth in Section 19.3.

1.20 "**Decommissioning Closure Report**" shall have the meaning set forth in Section 5.7(b).

1.21 "**Dispute Notice**" shall have the meaning set forth in Section 19.1(f).

1.22 "**Environmental Enforcement Actions**" shall mean, collectively, all actions or orders instituted, issued, threatened or required by any Governmental Authority and all claims made or threatened by any Person against Landlord, Tenant or the Premises (or any other Occupant, prior Occupant or prior owner thereof), arising out of or in connection with any Pre-Existing Environmental Condition or the assessment, monitoring, cleanup, containment, remediation or removal of, or damages caused or alleged to be caused by, any Pre-Existing Environmental Condition.

1.23 "**Event of Default**" shall mean those events defined in Article XI.

1.24 "**Expiration Date**" shall mean September 30, 2077.

1.25 "**Fee Mortgage**" shall mean any mortgage or deed of trust encumbering Landlord's interest in all or any portion of the Premises hereafter granted by Landlord to any institutional or commercial lender securing any loan from such institutional or commercial lender to Landlord.

1.26 "**Fee Mortgagee**" shall mean the holder of any Fee Mortgage.

1.27 "**Final Plans and Specifications**" shall mean any and all final plans, drawings and specifications utilized in the completion of any future Improvements.

1.28 "**First Offer Right**" shall have the meaning set forth in Section 12.2(a).

1.29 "**FMV**" shall have the meaning set forth in Section 19.1(a).

1.30 "**Governmental Authorities**" shall mean, collectively, all agencies, authorities, bodies, boards, commissions, courts, instrumentalities, legislatures, and offices of any nature whatsoever of any government, quasi-government unit or political subdivision, whether with a federal, state, county, district, municipal, city or otherwise and whether now or hereinafter in existence.

1.31 "**Hazardous Materials**" shall have the meaning set forth in Section 7.4(d).

1.32 "**Improvements**" shall mean all of the buildings, outside parking lots and spaces, parking decks, parking garages, driveways, sidewalks, landscaping and all other permanent improvements currently existing on the Land or hereafter constructed thereon.

1.33 "**Insurable Property**" shall have the meaning set forth in Section 8.4.

1.34 "**Insurance Proceeds**" shall have the meaning set forth in Section 9.2.

1.35 "**Land**" shall mean that certain parcel of land more particularly described in Exhibit A attached hereto and made a part hereof.

1.36 "**Landlord**" shall have the meaning set forth in the first unnumbered paragraph at the beginning of this Lease.

1.37 "**Landlord's Appraiser**" shall have the meaning set forth in Section 19.1(f).

1.38 "**Landlord's Award**" shall have the meaning set forth in Section 10.2.

1.39 "**Landlord's Closing Documents**" shall have the meaning set forth in Section 19.3(a)(i).

1.40 "**Landlord's Purchase Notice**" shall have the meaning set forth in Section 19.1.

1.41 "**Landlord's Statement**" shall have the meaning set forth in Section 19.3(d).

1.42 "**Lease**" shall mean this Master Lease Agreement as the same may be amended from time to time.

1.43 "**Lease Assignment**" shall have the meaning set forth in Section 19.3(a)(i).

1.44 "**Leasehold Mortgage**" shall have the meaning set forth in Section 6.1.

1.45 "**Leasehold Mortgagee**" shall mean the holder of a Leasehold Mortgage.

1.46 "**Leasehold Mortgage Foreclosure**" shall mean the earlier to occur of the following (i) the transfer of the interest of Tenant in the Premises and to this Lease to any Leasehold Mortgagee or any other Person by reason of (a) an assignment in lieu of foreclosure of any Leasehold Mortgage, (b) the Leasehold Mortgagee's exercise of any of its rights and/or remedies under its Leasehold Mortgage, including, without limitation, the exercise of the power of sale under the Leasehold Mortgage or any other foreclosure of the Leasehold Mortgage, (c) any other proceeding brought to enforce the rights of the holder of any Leasehold Mortgage or (d) any legal process or proceeding (other than any eminent domain proceeding by any Governmental Authority); (ii) the Leasehold Mortgagee's exercise of any right of entry and taking possession of the Premises prior to or in lieu of foreclosure of the Leasehold Mortgage; or (iii) the exercise by the Leasehold Mortgagee of its rights to collect rents from the Occupants pursuant to the Leasehold Mortgage or any other security document executed in connection with the Leasehold Mortgage (provided, however, any requirement by any Leasehold Mortgagee that Tenant deposit any or all of Tenant's cash, income or revenue in an escrow or other deposit account, the purpose of which is to create replacement reserves, real estate tax reserves, ground rent reserves or such other such reserves or escrow accounts as are customarily required by Leasehold Mortgagees to serve as additional security for loans secured by Leasehold Mortgages, shall not be deemed to be an exercise of any right to collect rents for the purposes of the foregoing clause (iii) unless the Leasehold Mortgagee shall have the right to control and direct, by way of lock box or otherwise, the general use and application of such cash, income and revenue beyond the

funding of the above-referenced required reserves and escrow accounts other than any requirement that expenditures be made in accordance with any approved budget, provided that such approved budget includes the payment of any and all Base Rent).

1.47 "**Legal Requirements**" shall mean, collectively, all statutes, ordinances, by-laws, codes, rules, regulations, restrictions, orders, judgments, decrees and injunctions (including, without limitation, all applicable building, health code, zoning, subdivision, and other land use statutes, ordinances, by-laws, codes, rules and regulations), whether now or hereafter enacted, promulgated or issued by any Governmental Authority affecting the Premises or the ownership, construction, development, maintenance, management, repair, use, occupancy, possession or operation thereof.

1.48 "**Loan Payoff**" shall have the meaning set forth in Section 19.1(a).

1.49 "**material and adverse**" shall have the meaning set forth in Section 7.3.

1.50 "**MDPH**" shall have the meaning set forth in Section 5.7(b).

1.51 "**Net Award**" shall have the meaning set forth in Section 10.2.

1.52 "**Net Proceeds**" shall have the meaning set forth in Section 9.6.

1.53 "**Notice of Leasehold Mortgagee's Intent to Exercise Remedies**" shall have the meaning set forth in Section 6.2(c).

1.54 "**Notice of Tenant's Failure to Cure**" shall have the meaning set forth in Section 6.2(b).

1.55 "**Notice of Termination**" shall have the meaning set forth in Section 19.1.

1.56 "**Occupant**" shall mean any sublessee, licensee, concessionaire, franchisee or user of all or any portion of the Premises under any Sublease whether now existing or hereafter entered into.

1.57 "**Oil**" shall have the meaning set forth in Section 7.4(d).

1.58 "**Partial Taking**" shall have the meaning set forth in Section 10.4.

1.59 "**Person**" shall mean any individual, corporation, limited liability company, general partnership, limited liability partnership, joint venture, stock company or association, company, bank, trust, trust company, land trust, business trust, unincorporated organization, unincorporated association, Governmental Authority or other entity of any kind or nature.

1.60 "**Permitted Encumbrances**" shall mean all covenants, restrictions, reservations, liens, conditions, easements and other encumbrances affecting the Premises or any portion thereof (i) as may hereafter be agreed to in writing by Tenant and Landlord; or (ii) which are caused or arise as a result of the acts or omissions of any of the Tenant Parties; or (iii) which are of record as of the Commencement Date; or (iv) as may be permitted pursuant to the provisions hereof.

1.61 "**Permitted Uses**" shall have the meaning set forth in Section 5.1. Notwithstanding anything to the contrary, Permitted Uses expressly excludes the Prohibited Uses.

1.62 "**Pre-Existing Environmental Condition**" shall mean the presence or release on or before the Commencement Date of any Hazardous Material, Oil or other Toxic Substance at, on, in, under and/or above the Premises.

1.63 "**Premises**" shall mean the Land and all of the Improvements and the Appurtenances.

1.64 "**prevailing party**" shall have the meaning set forth in Section 11.7.

1.65 "**Prohibited Tenant**" shall mean any entity which does not agree in writing to pay real estate taxes attributable to its tenancy.

1.66 "**Prohibited Uses**" shall mean (a) residential purposes; (b) a live entertainment establishment which features live entertainers engaging in sexual conduct or nudity as defined in M.G.L. c. 272, Section 31; (c) any motion picture theater presenting materials characterized by an emphasis on matter depicting sexual conduct or nudity as so defined; (d) any video store or other retail facility having a material portion of its stock in trade which is distinguished by its emphasis on sexual conduct as so defined; (e) massage parlor, a so-called "head" shop, off-track betting, gambling, gaming or check cashing facility; (f) car wash, automobile repair work or automotive service, automobile body shop, automobile, boat, trailer or truck leasing or sales, or laundromat; (g) tavern, bar, amusement park, carnival, banquet facility, dance hall, disco, nightclub or other entertainment facility including video game room, pool hall, arcade, indoor children's recreational facility or other amusement center; (h) funeral parlor, animal raising or storage, pawn shop, flea market or swap meet, junk yard; (i) drilling for and/or removal of subsurface substances, dumping, disposal, incineration or reduction of garbage or refuse, other than in enclosed receptacles intended for such purposes; (j) medical, dental, governmental, utility company or employment agency offices; or (k) any use which constitutes a public or private nuisance or produces objectionable noise or vibration.

1.67 "**Property Information**" shall have the meaning set forth in Section 19.3.

1.68 "**Protective Advances**" shall mean any sums expended by Landlord in accordance with the terms hereof to cure any default by Tenant (including, without limitation, any amounts expended by Landlord pursuant to Section 7.2, Section 11.6 and/or Section 11.7).

1.69 "**Purchase Price**" shall have the meaning set forth in Section 19.1(a).

1.70 "**Related Parties**" shall have meaning set forth in Section 8.6.

1.71 "**Rent**" shall mean, collectively, Base Rent and Additional Rent as more particularly set forth in Article IV.

1.72 "**Rent Default**" shall mean any failure by Tenant to pay any installment of Rent when due hereunder.

1.73 "**Reports**" shall have the meaning set forth in Section 7.1.

1.74 "**Settlement Statement**" shall have the meaning set forth in Section 19.1.

1.75 "**Site Assessments**" shall have the meaning set forth in Section 7.2(b).

1.76 "**Site Reviewers**" shall have the meaning set forth in Section 7.2(b).

1.77 "**Space Leases**" shall have the meaning set forth in Section 19.3(c).

1.78 "**Sublease**" shall mean any sublease, lease, license agreement, use agreement, tenancy at will agreement, concession agreement or other occupancy arrangement, whether now in existence or subsequently entered into by Tenant, encumbering or affecting any portion of the Premises.

1.79 "**Surrender Plan**" shall have the meaning set forth in Section 5.7(b).

1.80 "**Taking**" shall have the meaning set forth in Section 10.1.

1.81 "**Taxes**" shall have the meaning set forth in Section 4.5(a).

1.82 "**Temporary Taking**" shall have the meaning set forth in Section 10.7.

1.83 "**Tenant**" shall have the meaning set forth in the first unnumbered paragraph at the beginning of this Lease.

1.84 "**Tenant Excluded Transaction**" shall have the meaning set forth in Section 12.2(a).

1.85 "**Tenant Parties**" shall mean, collectively, Tenant and Tenant's agents, servants, employees, consultants, contractors, subcontractors, licensees and/or subtenants.

1.86 "**Tenant's Appraiser**" shall have the meaning set forth in Section 19.1(f).

1.87 "**Tenant's Award**" shall have the meaning set forth in Section 10.2.

1.88 "**Tenant's Basis**" shall have the meaning set forth in Section 19.1(a).

1.89 "**Tenant's Closing Documents**" shall have the meaning set forth in Section 19.3.

1.90 "**Tenant's Interest**" shall have the meaning set forth in Section 19.1(a).

1.91 "**Tenant's Property**" shall mean all furniture, equipment, fixtures, trade fixtures and other personal property belonging to Tenant or any Occupant.

1.92 "**Tenant's Statement**" shall have the meaning set forth in Section 19.3(e).

1.93 "**Tenant's Valuation Notice**" shall have the meaning set forth in Section 19.1(d).

1.94 "**Term**" shall have the meaning set forth in Section 3.1.

1.95 "**Third Appraiser**" shall have the meaning set forth in Section 19.1.

1.96 "**to Landlord's knowledge**" shall have the meaning set forth in Section 7.5(b).

1.97 "**Total Taking**" shall have the meaning set forth in Section 10.3.

1.98 "**Toxic Substances**" shall have the meaning set forth in Section 7.4(d).

1.99 "**Transfer of Control**" shall have the meaning set forth in Section 12.1.

1.100 "**Transferee**" shall mean (i) any Leasehold Mortgagee (or its affiliate) who acquires Tenant's interest in the Premises by virtue of a Leasehold Mortgage Foreclosure and any Person acquiring Tenant's interest in the Premises from such Leasehold Mortgagee (or affiliate) after a Leasehold Mortgage

Foreclosure, (ii) the Leasehold Mortgagee in the event that the Leasehold Mortgagee exercises its rights to collect rents from the Occupants pursuant to the Leasehold Mortgage or any other security document executed in connection with the Leasehold Mortgage and (iii) any Person who holds the tenant's interest under any new lease executed pursuant to Section 6.4.

1.101 "**Unleased Space**" shall have the meaning set forth in Section 9.4.

1.102 "**Warranties**" shall have the meaning set forth in Section 19.3(a)(i).

ARTICLE II.
DEMISE OF PREMISES; CONDITIONS

2.1 Demise of Premises. Landlord hereby leases to Tenant, and Tenant hereby leases from Landlord, the Premises for the Term upon the terms and conditions specified in this Lease.

2.2 Title and Condition of Premises. The Premises are demised and let subject to (i) all zoning regulations, restrictions, rules and ordinances, building codes and other Legal Requirements now in effect or hereafter adopted by any Governmental Authority having jurisdiction; (ii) such real estate taxes and municipal betterment assessments as are not yet due and payable on the Commencement Date; and (iii) the Permitted Encumbrances. The Premises are demised and let in an "AS IS, WHERE IS" condition as of the Commencement Date, with all faults, and without representations or warranties, express or implied, in fact or by law, whatsoever.

2.3 Notice of Lease. Tenant and Landlord agree to execute a Notice of Lease in a form that is suitable for recording with the Middlesex South Registry of Deeds and if applicable, filing with the Middlesex South Registry District of the Land Court, and such parties agree to execute said Notice of Lease as of the date of this Lease. Each party shall provide such evidence of authority as shall be required in connection with such recording and filing. Upon the expiration or earlier termination of this Lease, Landlord shall deliver to Tenant a notice of termination of lease in form and substance reasonably acceptable to both parties and, unless Tenant has delivered to Landlord written notice that Tenant disputes whether the Lease has been validly terminated, Tenant shall, within thirty (30) days of receipt thereof, time being of the essence, execute and deliver the same to Landlord for Landlord's execution and recordation with the Middlesex South Registry of Deeds and/or if applicable, filing with the Middlesex South Registry District of the Land Court. If Tenant fails to deliver the executed notice of termination of lease as and when required, Tenant hereby appoints Landlord as Tenant's attorney-in-fact to execute the same, such appointment being coupled with an interest.

ARTICLE III.
TERM

3.1 Term. The term of this Lease shall be the period commencing on the Commencement Date, and, unless earlier terminated pursuant to the terms hereof, ending on the Expiration Date (the "**Term**").

ARTICLE IV.
RENT AND OTHER CHARGES

4.1 Base Rent for Premises. During the Term, Tenant shall pay to Landlord Base Rent in equal monthly installments in the amounts shown on Exhibit B attached hereto and made a part hereof, in advance and without demand on the first day of each month for and with respect to such month. Unless otherwise expressly provided herein, the payment of Base Rent shall commence on the Commencement Date, and shall be prorated for any partial months.

4.2 Payment of Rent. All Rent shall be paid by Tenant to Landlord in lawful money of the United States of America at Landlord's address set forth herein or at such other place or to such other person as Landlord from time to time may designate.

4.3 Additional Rent. Tenant covenants to pay and discharge, when the same shall become due, as Additional Rent, all other amounts, liabilities and obligations which Tenant assumes or agrees to pay or discharge pursuant to this Lease, together with every fine, penalty, interest and cost which may be added for non-payment or late payment thereof in accordance with the provisions of this Lease, including interest for overdue payments of Base Rent at the Base Interest Rate, which interest shall commence the day following the due date of such payment, and, in the event of any failure by Tenant to pay or discharge any of the foregoing, Landlord shall have all rights, powers and remedies provided herein, by law or otherwise in the case of non-payment of rent.

4.4 Net Lease. It is understood and agreed by Tenant that this Lease is a triple net lease and the Rent and all other sums payable hereunder shall be absolutely net to Landlord. Tenant shall be responsible for all taxes, payments in lieu of taxes, assessments, utility charges, liens, insurance, maintenance, repairs and all other costs associated with the Premises or any portion thereof. Except as otherwise expressly provided herein, Tenant shall pay all sums payable hereunder without notice or demand, and without set-off, abatement, suspension or deduction and Tenant shall not interpose any counterclaim (other than a mandatory counterclaim which could be waived or barred if not asserted in such proceeding) or defense of whatever nature or description in any proceeding by Landlord for the collection of money due hereunder, provided, however, that such agreement not to interpose any counterclaim or defense shall not be construed as a waiver of Tenant's right to assert a counterclaim or defense against any action seeking to terminate this Lease or as a waiver of Tenant's right to assert claims against Landlord in any separate action.

4.5 Taxes and Other Charges.

(a) Subject to Section 4.7 hereof, Tenant will pay directly to the applicable taxing authorities (i) all taxes, assessments, levies, fees, water and sewer rents and charges, general and special, ordinary and extraordinary, foreseen and unforeseen, which are, at any time prior to or during the Term hereof, imposed or levied upon or assessed against (A) the Premises, (B) any Rent or other sum payable hereunder or (C) this Lease or the leasehold estate hereby created, or which arise in respect of the operation, possession or use of the Premises; (ii) all gross receipts or similar taxes imposed or levied upon, assessed against or measured by any Rent or other sum payable hereunder; and (iii) all sales, use and similar taxes at any time levied, assessed or payable on account of the acquisition, leasing or use of the Premises (collectively, the "**Taxes**"). Any such Taxes, with respect to the Premises for the then current tax period shall be apportioned as of the beginning and the end of the Term, and the pro rata share thereof shall be paid to Landlord or credited to Tenant, as the case may be. Tenant shall not be required to pay any franchise, inheritance, estate, succession, gift, rental, transfer, income or similar tax of Landlord (other than any tax referred to in clause (ii) above), unless such Tax is imposed, levied or assessed in substitution for any other tax, assessment, charge or levy which Tenant is required to pay pursuant to this Section 4.5, but only in an amount calculated as if Landlord owned only the Premises and Landlord's income consisted only of amounts payable hereunder. Tenant will furnish to Landlord, promptly after demand therefor, proof of payment of all items referred to above which are payable by Tenant. If any such assessment may legally be paid in installments, Tenant may pay such assessment in installments; in such event, Tenant shall be liable only for installments which are attributable to any period falling, in whole or in part, within the Term hereof (subject to proration as set forth above as to the beginning and the end of the Term).

(b) Subject to the provisions of Section 4.7 below, in the event that Tenant fails to pay the Taxes for any fiscal year, or portion thereof, Landlord shall have the right to pay said Taxes, upon thirty (30) days prior written notice to Tenant. In the event that Landlord pays any outstanding Taxes, Tenant shall pay to Landlord within thirty (30) days of a written request for such payment, any and all sums paid by Landlord to pay such outstanding Taxes.

4.6 Utilities. Tenant shall obtain and promptly pay directly to the applicable provider all charges for heat, gas, hot water, electricity, sewage charges and fees, and other utilities and/or services used and/or consumed in, or furnished to, the Premises. Landlord shall have no responsibility or liability for any interruption, curtailment, stoppage, or suspension of utilities, except to the extent caused by Landlord or its agents or contractors.

4.7 Permitted Contests. Landlord shall not require Tenant, nor shall Landlord have the right, to pay, discharge or remove any tax, assessment, levy, fee, rent, charge, lien or encumbrance, or to comply with any Legal Requirement applicable to the Premises or the use thereof, so long as Tenant shall in good faith contest the existence, application, amount or validity thereof by appropriate proceedings which shall prevent the collection of or other realization upon the tax, assessment, levy, fee, rent, charge, lien or encumbrance so contested, and the sale, forfeiture or loss of the Premises or any Rent or any Additional Rent to satisfy the same, and which shall not affect the payment of any Rent provided that such contest shall not subject Landlord to the risk of any criminal liability or civil penalty. Tenant shall give such reasonable security as may be requested by Landlord to insure payment of such tax, assessment, levy, fee, rent, charge, lien, encumbrance, liability or penalty and to prevent any sale or forfeiture of the Premises by reason of such nonpayment, and hereby indemnifies Landlord for any such liability or penalty. Upon the completion or termination of any final appeal of any proceeding relating to any amount contested by Tenant pursuant to this Section 4.7, Tenant shall immediately pay any amount determined in such proceeding to be due, and in the event Tenant fails to make such payment, Landlord shall have the right to make any such payment on behalf of Tenant and charge Tenant therefor. Notwithstanding any other provision in this Lease, Landlord may make any payment or take such other action as it may reasonably deem necessary in order to prevent the sale or foreclosure of the Premises. Landlord hereby agrees to cooperate with Tenant and, if such joinder is necessary or desirable based on the nature of the permitted contest, to join in any permitted contest as a party, or, where appropriate, authorize Tenant to undertake a permitted contest in the name of Landlord. Tenant hereby agrees that if Landlord, at the request of Tenant, joins in any permitted contest, Tenant shall pay any and all reasonable costs incurred by Landlord as a result of Landlord's participation in such permitted contests, including, without limitation, reasonable attorneys' fees.

ARTICLE V.
USE AND QUIET ENJOYMENT; SURRENDER

5.1 Use; Conditions. Without Landlord's prior written consent, Tenant covenants, promises and agrees that during the Term of this Lease it shall not devote the Premises to any uses other than general office use and, to the extent permitted by law (as the same may be varied by special permit, variance or other relief), uses ancillary thereto, including parking and other ancillary uses (collectively, the "**Permitted Uses**"); provided, however, in no event shall Tenant use the Premises for the Prohibited Uses. Tenant covenants and agrees to use the Premises in accordance with any permits which may be issued by the City of Cambridge and to comply with the requirements therein specified.

5.2 Quiet Enjoyment. If and so long as Tenant shall pay all Rent and other charges herein provided and shall observe and perform all covenants, agreements and obligations contained herein,

Landlord warrants peaceful and quiet occupation and enjoyment of the Premises by Tenant as against the claims of all persons lawfully claiming by, through or under Landlord, subject, nevertheless, to the covenants, terms and conditions of this Lease and Permitted Encumbrances.

5.3 Compliance with Law. Subject to the rights granted to Tenant by Section 4.7, Tenant shall, at its expense, comply with and shall cause the Premises and all Occupants of any portion thereof to comply with all Legal Requirements affecting the Premises, or any portion thereof, or the use thereof, including those which require the making of any structural, unforeseen or extraordinary changes, whether or not any of the same which may hereafter be enacted involve a change of policy on the part of the Governmental Authority enacting the same.

5.4 Compliance with Contractual Requirements. Tenant shall, at its expense, comply with and shall cause the Premises and all Occupants of any portion thereof to comply with (a) all matters of record, having priority over this Lease, affecting the title to the Premises or any portion thereof, and (b) the requirements of all policies of insurance which are carried by Tenant (or by Landlord when permitted by the terms of Sections 11.5 or 11.6 of this Lease) which at any time may be in force with respect to the Premises or any portion thereof.

5.5 INTENTIONALLY OMITTED.

5.6 Ownership of the Improvements. During the Term, the Improvements shall be owned by Tenant. Upon the expiration or earlier termination of the Term, all of Tenant's right, title and interest in and to the Improvements shall automatically be vested in Landlord. In confirmation of the foregoing, Tenant shall, on or before the expiration of the Term (or within ten (10) Business Days after the earlier termination of the Lease, as the case may be) execute a bill of sale, stating consideration of Ten Dollars, and otherwise in form and substance reasonably acceptable to Landlord and Tenant, conveying all of Tenant's right, title and interest in and to the Improvements to Landlord. Tenant's obligations under this Section 5.6 shall survive the expiration or earlier termination of the Term.

5.7 Surrender of Premises.

(a) At the expiration or earlier termination of the Term of this Lease, Tenant shall peaceably leave, quit and surrender the Premises in the condition in which the same are required to be maintained hereunder, broom-clean and free of liens, personal property, tenants and occupants. Subject to the rights of any Leasehold Mortgagee as provided in Article VI, upon such expiration or termination, any and all of Tenant's Property remaining on the Premises shall become the sole property of Landlord at no cost to Landlord.

(b) At least thirty (30) days prior to the expiration of the Term (or, if applicable, within five (5) Business Days after any earlier termination of this Lease), Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Legal Requirements) to be taken by Tenant in order to render the Premises (including, without limitation, floors, walls, ceilings, counters, piping, supply lines, waste lines and plumbing and all exhaust or other ductwork) free of Hazardous Materials and otherwise released for unrestricted use and occupancy including without limitation causing the Premises to be decommissioned in accordance with the regulations of the U.S. Nuclear Regulatory Commission and/or the Massachusetts Department of Public Health (the "**MDPH**") for the control of radiation and cause the Premises to be released for unrestricted use by the Radiation Control Program of the MDPH (the "**Surrender Plan**"). The Surrender Plan shall be prepared so that, following its implementation, all exhaust and other duct work in the Premises may be reused by a subsequent tenant or disposed of in conformance with all applicable Environmental Laws without incurring special costs on account of any Hazardous Materials or

undertaking special procedures for demolition, disposal, investigation, assessment, cleaning or removal of such Hazardous Materials or needing to give notice in connection with such Hazardous Materials. The Surrender Plan (i) shall be accompanied by a current list of (A) all local, state and federal licenses, registrations, permits and approvals held by or on behalf of any Occupant with respect to Hazardous Materials in, on, under, at or about the Premises, and (B) a list of all Hazardous Materials used by Occupants during the Term (and the Occupants that used the same), and (ii) shall be subject to the review and approval of Landlord's environmental consultant. In connection with review and approval of the Surrender Plan, upon request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning the use of and operations within the Premises as Landlord shall request. On or before the expiration of the Term, Tenant shall (i) perform or cause to be performed all actions described in the approved Surrender Plan, and (ii) deliver to Landlord a certification from a third party certified industrial hygienist reasonably acceptable to Landlord certifying that the Premises do not contain any Hazardous Materials and evidence that the approved Surrender Plan shall have been satisfactorily completed by a contractor acceptable to Landlord (the "**Decommissioning Closure Report**"). The Decommissioning Closure Report shall also include reasonable detail concerning the clean up measures taken, the clean up locations, the tests run, and the analytic results. Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the expiration of the Term (or, if applicable, the date which is thirty (30) days after any earlier termination of this Lease), free of Hazardous Materials and otherwise available for unrestricted use and occupancy as aforesaid. Landlord shall have the unrestricted right to deliver the Surrender Plan, the Decommissioning Closure Report and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties. Such third parties and the Landlord Parties shall be entitled to rely on the Decommissioning Closure Report. If Tenant shall fail to prepare a Surrender Plan or submit a Decommissioning Closure Report based on the Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address the use of Hazardous Materials by any of the Tenant Parties in, on, at, under or about the Premises, Landlord shall have the right to take any such actions as Landlord may deem reasonable or appropriate to assure that the Premises are surrendered in the condition required hereunder, the cost of which actions shall be reimbursed by Tenant as additional rent upon demand. Tenant's obligations under this Section 5.7(b) shall survive the expiration or earlier termination of this Lease.

5.8 Permits and Approvals.

(a) Tenant shall, at its sole cost and expense, obtain all Approvals required for the leasing, construction, maintenance, operation and use of the Premises.

(b) Tenant shall be entitled from time to time to seek and obtain Approvals in order to allow it to change the uses of the Premises, and to construct improvements thereon, so long as the uses are Permitted Uses and the improvements comply with the terms of this Lease. Landlord agrees, at Tenant's sole cost, to cooperate with Tenant in connection with obtaining such Approvals, including without limitation by executing applications and such reasonable agreements, documents and instruments deemed necessary or convenient by Tenant in connection therewith ("**Approval Instruments**") provided the same do not (i) create any personal liability or obligation of Landlord, and (ii) require Landlord to participate in litigation against the City of Cambridge.

(c) Notwithstanding the foregoing, the covenants of Landlord contained in this Section 5.8 shall not apply to any Prohibited Uses.

ARTICLE VI.
RIGHT TO MORTGAGE; PROTECTION OF LEASEHOLD MORTGAGEES

6.1 Tenant's Right to Mortgage. Notwithstanding any other provisions of this Lease, and without prior approval of Landlord, Tenant shall at all times and from time to time have the right to encumber, pledge or convey all of its leasehold estate in the Premises, and its title and interest in any fixtures and personal property, and all of its rights under this Lease by way of one or more leasehold mortgages, deeds of trust or other forms of security deed to a lending institution which constitutes from time to time a first or second lien on Tenant's entire interest in the Premises (each of the foregoing, a "**Leasehold Mortgage**") (and, where appropriate, by grant of a security interest under the Uniform Commercial Code) to secure the payment of any loan or loans obtained by Tenant; provided, however, that (a) there shall be no more than two (2) Leasehold Mortgages in effect at any given time, and (b) within ten (10) days after the recording of any Leasehold Mortgage, Tenant shall deliver to Landlord a written notice specifying all prepayment and defeasance terms thereof. In no event shall any Leasehold Mortgagee have any rights in and to, or assert any claims alleging an ownership or security interest in Landlord's interest in the Premises.

6.2 Leasehold Mortgagee's Rights. If Tenant grants a Leasehold Mortgage and the applicable Leasehold Mortgagee furnishes Landlord with written notice that it holds such Leasehold Mortgage (along with the address to which all notices to be delivered to the Leasehold Mortgagee in accordance with the terms hereof shall be delivered), then, until such time as Landlord receives notice that such Leasehold Mortgage has been paid in full or otherwise discharged of record, and so long as Leasehold Mortgagee has materially complied with the provisions of this Article VI, the following provisions shall apply:

(a) There shall be no cancellation, surrender or modification of this Lease by agreement of Landlord and Tenant, without the prior consent in writing of the Leasehold Mortgagee, which consent may be withheld in the Leasehold Mortgagee's sole and absolute discretion.

(b) Landlord will concurrently deliver to the Leasehold Mortgagee (addressed to the Leasehold Mortgagee at such address and to the attention of such individual as the Leasehold Mortgagee has provided to Landlord) a copy of any notice or other communication regarding any default hereunder from Landlord to Tenant under this Lease at the time of giving such notice or communication to Tenant, and no proposed termination of this Lease, or of Tenant's right to possession of the Premises or any reletting of the Premises by Landlord predicated on the giving of such notice, shall be effective, unless Landlord provides to the Leasehold Mortgagee written notice, or a copy of its notice to Tenant of such default or termination, and Landlord complies with the other provisions of this Article VI. Upon the expiration of any applicable cure period provided to Tenant, Landlord will send written notice to the Leasehold Mortgagee of Tenant's failure to effectuate a cure within said cure period (the "**Notice of Tenant's Failure to Cure**").

(c) In the event of any default by Tenant under any of the provisions of this Lease, the Leasehold Mortgagee will have the right to cure the default during the cure period provided to Tenant for remedying such default or causing it to be remedied, plus, in each case, the Leasehold Mortgagee shall have an additional period after the Leasehold Mortgagee's receipt of a Notice of Tenant's Failure to Cure of (i) thirty (30) days with respect to monetary defaults not cured by Tenant within its applicable cure period, and (ii) sixty (60) days with respect to all other defaults not cured by Tenant within its applicable cure period, within which additional period the Leasehold Mortgagee may cure such default or exercise its rights under its Leasehold Mortgage in order to effectuate a Leasehold Mortgage Foreclosure (or such longer time as may be reasonably necessary provided the Leasehold Mortgagee diligently prosecutes the cure to completion or diligently pursues its rights and remedies in order to effectuate a Leasehold Mortgage Foreclosure); provided

that, within fifteen (15) Business Days after receipt of the Notice of Tenant's Failure to Cure, the Leasehold Mortgagee sends to Landlord written notice (a "**Notice of Leasehold Mortgagee's Intent to Exercise Remedies**") that the Leasehold Mortgagee has elected to (x) cure such default or (y) not cure such default and instead to pursue its rights and remedies in order to effectuate a Leasehold Mortgage Foreclosure.

(d) In the event Tenant defaults under any of the provisions of this Lease, regardless whether such default consists of a failure to pay Rent or a failure to do any other thing which Tenant is required to do hereunder, the Leasehold Mortgagee, without prejudice to any of its rights against Tenant, shall have the right, subject to the provisions of the preceding subsection (c), but not the obligation, to cure such default hereunder within the applicable grace period provided for in the preceding subsection (c), and Landlord shall accept such performance on the part of the Leasehold Mortgagee as though the same had been performed by Tenant; and for such purpose Landlord and Tenant hereby authorize the Leasehold Mortgagee to enter upon the Premises and to exercise any of Tenant's rights and powers under this Lease.

(e) In the case of any Event of Default not capable of cure by the Leasehold Mortgagee without having possession of the Premises (which in no event shall include any payment default hereunder), as to which the Leasehold Mortgagee has notified Landlord, pursuant to a Notice of Leasehold Mortgagee's Intent to Exercise Remedies, that the Leasehold Mortgagee intends to cure such Event of Default, the Leasehold Mortgagee's cure period shall be suspended during any period in which any exercise of rights and remedies by the Leasehold Mortgagee is enjoined or stayed and until such time as the interest of Tenant under this Lease is so acquired, provided that, to the extent permissible by law, the Leasehold Mortgagee commences and thereafter diligently pursues a Leasehold Mortgage Foreclosure and, after taking actual possession of the Premises, (i) commences to cure such default or breach within sixty (60) days thereafter, and (ii) continuously pursues such cure and completes the same as soon as practicable if such default or breach cannot be cured within such period, but only so long as the Leasehold Mortgagee keeps and performs, or otherwise causes to be kept and performed, all covenants and conditions of this Lease to be kept or performed by Tenant (including the payment of Rent all other monetary obligations). Leasehold Mortgagee shall provide Landlord with written monthly status reports as to the progress of any pending Leasehold Mortgage Foreclosure until completed. In no event shall Landlord have the right to terminate this Lease for any Event of Default set forth in this Section 6.2(e) so long as the Leasehold Mortgagee continues to diligently pursue cure of such Events of Default and otherwise complies with the terms and conditions of this Lease.

(f) In the event that the Leasehold Mortgagee cannot cure an Event of Default by (i) the payment of money or (ii) exercising commercially reasonable efforts to take any other action (which shall include taking possession of the Premises, if necessary), Landlord may not terminate this Lease for the failure of the Leasehold Mortgagee to cure such Event of Default.

(g) Landlord agrees that the name of the Leasehold Mortgagee shall be added as "mortgagee" and "additional insured" with respect to any and all liability insurance policies required to be carried by Landlord, and shall be so added as to any insurance policies carried by Tenant affecting the Premises.

(h) In the case of any Event of Default with respect to which the Leasehold Mortgagee has notified Landlord pursuant to a Notice of Leasehold Mortgagee's Intent to Exercise Remedies that it has elected not to cure such Event of Default, but, instead, has elected to commence to exercise its rights and remedies in order to effectuate a Leasehold Mortgage Foreclosure, then, (1) Landlord shall not be entitled to terminate this Lease as a consequence of such Event of Default

provided that the Leasehold Mortgagee diligently pursues its rights and remedies with respect to a Leasehold Mortgage Foreclosure to completion (it being agreed that any such requirement shall be suspended during any period in which any exercise of rights and remedies by the Leasehold Mortgagee is enjoined or stayed as long the Leasehold Mortgagee recommences the diligent pursuit of its rights and remedies with respect to a Leasehold Mortgage Foreclosure as soon as and to the extent permitted under applicable law) and (2) from and after the effective date of the Leasehold Mortgage Foreclosure, the applicable Transferee:

(i) Shall take Tenant's interest in this Lease and the Premises, subject to and with the benefit of all of the provisions of this Lease;

(ii) Shall, subject to the provisions hereof, cure any and all existing Rent Defaults by Tenant, plus any interest due and owing on such amounts, regardless of when such Rent Defaults occurred, provided that written notice of each such Rent Default has been given by Landlord to Tenant and the Leasehold Mortgagee within twenty (20) Business Days after the occurrence of each such Rent Default; and

(iii) Shall be liable for the performance of all the obligations of Tenant arising under this Lease on and after the effective date of the Leasehold Mortgage Foreclosure; provided, however, in no event shall the Transferee be obligated to reimburse Landlord for any Protective Advances expended or incurred by Landlord prior to the effective date of the Leasehold Mortgage Foreclosure.

(i) Nothing herein contained shall require the Leasehold Mortgagee or its nominee or any Transferee to cure any default of Tenant other than as expressly provided herein or require the Leasehold Mortgagee to commence or continue the exercise of any of its rights and remedies under the Leasehold Mortgage; provided, however, that Leasehold Mortgagee shall notify Landlord in writing if it elects to discontinue the exercise of any of its rights and remedies.

(j) The term "**Leasehold Mortgage**," whenever used herein, shall include whatever security instruments are used in the locale of the Premises, including, without limitation, mortgages, as well as financing statements, security agreements and other documentation required pursuant to the Uniform Commercial Code.

(k) Notwithstanding any of the foregoing to the contrary, Landlord agrees that the making of the Leasehold Mortgage shall not be deemed to constitute an assignment or transfer of this Lease or of the leasehold estate created hereby, nor shall the Leasehold Mortgagee, as such, be deemed to be an assignee or transferee of this Lease or of the leasehold estate created hereby so as to require the Leasehold Mortgagee, as such, to assume the performance of any of the terms, covenants or conditions on the part of Tenant to be performed hereunder except as specifically set forth herein. In addition, any Leasehold Mortgage Foreclosure shall be deemed to be a permitted sale, transfer or assignment of this Lease and of the leasehold estate created hereby.

(l) The Leasehold Mortgagee may, upon acquiring Tenant's leasehold estate pursuant to any Leasehold Mortgage Foreclosure, without further consent of Landlord, sell and assign this Lease and the leasehold estate on such terms and to such Persons as the Leasehold Mortgagee shall determine, and Leasehold Mortgagee shall be relieved of all obligations under this Lease; provided that such assignee has agreed to be duly bound by all of the provisions of this Lease. Landlord shall be under no obligation to modify this Lease in any respect in connection with any such sale and assignment. Notwithstanding anything above to the contrary, in no event shall the Leasehold Mortgagee have the right to assign or otherwise transfer its interests in the Lease to any Prohibited Tenant.

(m) Landlord and Tenant shall not (i) consent or refuse to consent to any action taken or to be taken, the result of which would diminish or impair the priority of any Leasehold Mortgage; or (ii) subordinate or consent to the subordination of this Lease to any subsequent, underlying lease or Fee Mortgage.

6.3 Notices To and From Leasehold Mortgagees. Without limiting Tenant's obligations under Section 15.4 below, Tenant hereby agrees to provide prompt notice to Landlord of any claimed defaults under any Leasehold Mortgage together with copies of any written notices thereof received by Tenant. Landlord hereby agrees that notices to any Leasehold Mortgagee shall only be considered "given" under any applicable provisions of this Lease, if such notices are given in accordance with the notice provisions of Section 17.1 and to the address for the Leasehold Mortgagee provided to Landlord by the Leasehold Mortgagee.

6.4 New Lease. Landlord agrees that, notwithstanding anything to the contrary herein, in the event of termination of this Lease by reason of any Event of Default, as a consequence of any Leasehold Mortgage Foreclosure, or if this Lease is rejected or disaffirmed by Tenant pursuant to any bankruptcy, insolvency, reorganization, moratorium or similar law, then Landlord will enter into a new lease for the Premises with the Leasehold Mortgagee or any Transferee for the remainder of the Term effective as of the date of such termination, Leasehold Mortgage Foreclosure or rejection, upon substantially the same terms, provisions, covenants, and agreements as herein contained, provided that the Leasehold Mortgagee or any Transferee shall (a) make written request upon Landlord of such new lease consistent with the terms of this Lease within sixty (60) days after the later of (i) the date of such termination, Leasehold Mortgage Foreclosure or rejection, or (ii) the date of the Leasehold Mortgagee's receipt of notice of the termination or rejection from Landlord, (b) with respect to the period of time between such termination, Leasehold Mortgage Foreclosure or rejection and the date on which the new lease shall be executed, pay all installments of Rent specified hereunder as and when due as if there had been no termination, Leasehold Mortgage Foreclosure or rejection, and (c) if there shall have been any default by Tenant hereunder prior to such termination, (i) cure any such monetary default prior to the execution of such new lease, and (ii) commence to cure any such non-monetary default or breach within sixty (60) days after the execution of such new lease, and continuously pursue such cure and complete the same as soon as practicable. The parties shall act promptly to execute such new lease after Landlord's receipt of such request. If, as a result of any such termination of the Lease, Landlord shall have succeeded to the interest of Tenant under any sublease of all or any portion of the Premises, Landlord shall execute and deliver an assignment of such interest to the tenant under the new lease simultaneously with the delivery of such new lease.

6.5 No Subordination of Fee. At no time shall Landlord's interest in the Premises or this Lease be subordinated in any manner to the lien of any Leasehold Mortgage or the interests of any Leasehold Mortgagee or any other mortgagee or lienholder of Tenant or any person claiming by or through Tenant.

6.6 Cooperation with Lenders. Landlord agrees to cooperate reasonably with any Leasehold Mortgagee and with Tenant in Tenant's negotiations with prospective Leasehold Mortgagees, and to accommodate the reasonable requirements of such lenders. Notwithstanding the foregoing, such obligations as to cooperation and accommodation shall not require Landlord to modify the terms of this Lease and shall not under any circumstances be construed as Landlord acquiescing to the subordination of either Landlord's interest in the Premises or any of the Rent due and owing to Landlord hereunder.

ARTICLE VII.
MAINTENANCE, REPAIR AND OPERATION

7.1 Maintenance and Repair: Operation.

(a) Tenant agrees that it will, during the Term of this Lease, at its expense, keep, maintain, use and operate the Premises (including any altered, rebuilt, additional or substituted buildings, structures and other improvements thereto) in good order, condition, repair and appearance and in a marketable and tenantable condition in a manner consistent with the manner in which similarly situated space is used in Cambridge, Massachusetts, and will promptly make all structural and non-structural, foreseen and unforeseen, and ordinary and extraordinary changes and repairs of every kind and nature which may be reasonably required to be made upon or in connection with the Premises or any part thereof in order to keep and maintain the Premises in good order, condition, repair and appearance and in such a marketable and tenantable condition. Tenant shall, at its own expense, keep the Premises in a clean, neat and sanitary condition. Landlord shall not be required to maintain, repair or rebuild, or to make any alterations, replacements or renewals of any nature or description to the Premises, or any part thereof, whether ordinary or extraordinary, structural or non-structural, foreseen or unforeseen, or to maintain the Premises or any part thereof in any way. Tenant hereby expressly waives any right to make repairs or improvements at the expense of Landlord.

(b) In the event that in connection with any Leasehold Mortgage Foreclosure, the Leasehold Mortgagee engages independent professional consultants, engineers and inspectors to perform any environmental and/or structural investigations and/or other inspections relating to the general condition of the Premises (the written results of such investigations and inspections shall be collectively referred to herein as the "**Reports**"), the Leasehold Mortgagee shall deliver true and correct copies of the Reports to Landlord.

7.2 Inspection by Landlord; Landlord's Right to Maintain: Indemnification.

(a) Landlord and its authorized representatives shall have the right to inspect the Premises during regular business hours upon twenty-four (24) hours' prior written notice, provided that such inspections do not unreasonably interfere with the operations of Tenant or any Occupant, as applicable. In the event of an emergency, such inspection by Landlord may take place at any time without prior notice.

(b) Notwithstanding anything to the contrary contained in the Lease, Tenant shall, upon at least ten (10) Business Days' prior written notice from Landlord, permit such persons as Landlord may designate who shall be Licensed Site Professionals (as defined by the Massachusetts Contingency Plan, 310 CMR 40.0000 et seq.), geologists, professional engineers or other appropriately licensed, trained or certified individuals or those working under their supervision ("**Site Reviewers**") to visit the Premises and perform environmental audits, site investigations and site assessments ("**Site Assessments**"). The Site Reviewers shall provide Tenant with insurance certificates evidencing commercial general liability insurance (including property damage, bodily injury and death) naming Tenant as an additional insured, contractor's pollution liability insurance naming Tenant as an additional insured, and professional errors and omissions insurance (without a pollution exclusion), all issued by an insurance company having a rating of at least "A-VII" by A.M. Best Company and with limits of at least $1,000,000 per occurrence, and $2,000,000 in the aggregate. Landlord shall repair any physical damage caused by the performance of the Site Assessments and shall restore the Premises to its condition immediately prior to such Site Assessment(s). Such Site Assessments may include both above and below the ground testing for

Hazardous Materials and such other tests as may be necessary, in the opinion of the Site Reviewers, to conduct the Site Assessments. Tenant shall supply to the Site Reviewers without representation or warranty such historical and operational information in its possession regarding the Premises as may be reasonably requested by the Site Reviewers to facilitate the Site Assessments, and shall make available for meetings with the Site Reviewers appropriate personnel having knowledge of such matters. If the Site Assessments disclose the presence of Hazardous Materials for which Tenant is responsible under the Lease, the cost of performing the Site Assessments shall be paid by Tenant. In all other cases the cost of performing the Site Assessments shall be paid by Landlord.

(c) Notwithstanding anything above to the contrary, (i) Landlord shall have the right, at the sole cost of Tenant and upon thirty (30) days' prior written notice (except in the case of an emergency, in which instance, the written notice shall be provided to Tenant within a time that is reasonable relative to the nature of the emergency), to cure any default by Tenant with respect to the maintenance, repair and operation activities set forth in Section 7.1, and all costs incurred by Landlord to cure any such default shall be charged to Tenant as Additional Rent pursuant to the provisions of Section 4.3 of this Lease, and (ii) Tenant agrees to indemnify and hold harmless Landlord from any and all claims, damages or other liabilities resulting from any action taken by Landlord to cure any such default, except to the extent such claims, damages or other liabilities arise from Landlord's gross negligence or willful misconduct.

7.3 Alterations; Demolition and Reconstruction. Tenant shall have the right to make changes and other alterations to the Improvements, provided, however, that such changes do not (i) result in a violation of Legal Requirements, including without limitation applicable zoning laws (as the same may be modified by special permit, variance or other relief), or (ii) allow for a use other than the Permitted Uses (it being expressly agreed that any change of use within the Permitted Uses shall not require the consent of Landlord hereunder), or (iii) adversely affect the structural integrity of any of the Improvements (it being expressly agreed that Tenant shall have the right to make structural changes, so long as the structural integrity of the Improvements is not impaired thereby). Tenant shall also have the right to demolish and replace the Improvements in part or in their entirety with such other Improvements as may be determined by Tenant in its reasonable discretion, but with the prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed so long as the new Improvements (1) are used for the Permitted Uses, (2) comply with Legal Requirements, including without limitation applicable zoning laws (as the same may be modified by special permit, variance or other relief), and (3) the value of the Premises upon completion of the new Improvements is not materially and adversely affected thereby. For purposes of this Section 7.3, no change in value shall be deemed "**material and adverse**" unless the same exceeds ten percent (10%) of the fair market value of the Improvements immediately prior to demolition, provided that the Premises were maintained in the condition required hereunder.

7.4 New Hazardous Materials and Oil; Indemnification.

(a) Tenant unconditionally agrees that neither it nor any Occupant will dump, flush, release or in any way introduce any Hazardous Materials, Oil or any other Toxic Substances into the septic, sewage or other waste disposal systems serving the Premises (the foregoing shall not prevent the introduction of such substances into a waste disposal system specifically designed to receive such substances so long as said system is constructed and maintained in accordance with all applicable Legal Requirements). In the event of any such unpermitted introduction, Tenant shall, at its sole cost and expense, cleanup promptly any contamination and/or damage occasioned by such unpermitted introduction.

(b) Tenant further unconditionally agrees that neither it nor any Occupant will release, generate, store or use (except in accordance with all applicable Legal Requirements) or dispose of

any Hazardous Materials, Oil or any other Toxic Substances in, on, under, at or above the Premises, or dispose of any Hazardous Materials or Oil or Toxic Substances from the Premises into the air, ground, surface, water, groundwater or subsurface or to any other location in the environment or otherwise, except disposal to a properly licensed, insured and approved disposal facility and then only in compliance with any and all applicable Legal Requirements. In the event of a breach of the foregoing, Tenant hereby agrees that it shall be responsible for any and all costs relating to the assessment, monitoring, cleanup, containment, removal, and/or remediation of any such Hazardous Materials, Oil or any other Toxic Substances, including, without limitation, all costs, damages and liabilities incurred by Landlord as a result thereof. Upon notice of any violation of this Section 7.4(b), Tenant shall promptly take all such actions or cause the responsible party to take all such actions to arrange for the assessment, monitoring, cleanup, containment, removal, remediation and/or restoration of the Premises as are required pursuant to any of the Environmental Laws or by any Governmental Authority, provided, however, that prior to taking any such actions, Tenant shall submit a plan of all such actions to be taken to Landlord for its prior approval, which approval shall not be unreasonably withheld, delayed or conditioned, and in any event, with respect to any release to the environment, shall achieve a Class A-1 or a Class A-2 Response Action Outcome (as those terms are defined in the Massachusetts Contingency plan, 310 CMR 40.0000, et seq).

(c) For any breach of the above requirements or to the extent of a release of any Hazardous Materials, Oil or any other Toxic Substance on, in, at, under, or from the Premises after the Commencement Date, Tenant, at its sole cost and expense, shall indemnify, exonerate and save harmless Landlord, its successors and assigns, against and from all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, proceedings and reasonable costs, disbursements or expenses of any kind whatsoever, including, without limitation, reasonable attorneys' fees and experts' fees and disbursements which may at any time be imposed upon, incurred by or asserted or awarded against Landlord, its successors and assigns (collectively, "**Claims**") arising from or out of any violation of the obligations of Tenant under this Article VII or any such release.

(d) "**Hazardous Materials**," "**Oil**" and "**Toxic Substances**," as used in this Lease, shall have the same meanings ascribed to such terms in the Massachusetts Oil and Hazardous Material Release Prevention Act, as amended, Mass. Gen. Laws ch. 21E; in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. § 9601 et seq.; in the Hazardous Materials Transportation Act, 49 U.S.C. § 1802; in the Toxic Substances Act, 15 U.S.C. § 2601 et seq.; and in the regulations adopted and publications promulgated pursuant to said Acts, all as the same may be amended from time to time.

(e) The obligations of Tenant under this Section 7.4 shall constitute an independent covenant of Tenant, shall not be affected by any Event of Default under this Lease and shall survive the expiration or any earlier termination of the Term of this Lease.

7.5 Pre-Existing Hazardous Materials and Oil.

(a) Landlord represents and warrants, to Landlord's knowledge as of the date hereof, that no Pre-Existing Environmental Condition exists on the Premises, except as set forth in the environmental reports identified on Exhibit C attached hereto and incorporated herein by reference. In the event of a breach of the above representation and warranty, except to the extent contributed to or exacerbated by any of the Tenant Parties (it being understood and agreed that Tenant shall be responsible for the costs associated with or resulting from such contribution or exacerbation), Landlord hereby agrees that it shall be responsible for any and all costs relating to the assessment, monitoring, cleanup, containment, removal, and/or remediation of such Pre-Existing

Environmental Condition, including, without limitation, all costs to restore the Premises as a result of any such Pre-Existing Environmental Condition and all costs, damages and liabilities incurred by Tenant as a result of any such Pre-Existing Environmental Condition, it being understood and agreed that such restoration shall not require actions beyond those necessary to achieve a Class A-1 or a Class A-2 Response Action Outcome (as those terms are defined in the Massachusetts Contingency plan, 310 CMR 40.0000, et seq).

(b) Tenant hereby acknowledges that it has reviewed the reports identified on Exhibit C. Except to the extent the same are the responsibility of Landlord pursuant to the terms of Section 7.5(a) above, Tenant hereby agrees that it shall be responsible for any and all costs relating to the assessment, monitoring, cleanup, containment, removal, and/or remediation of Pre-Existing Environmental Conditions, including, without limitation, all costs, damages and liabilities incurred by Landlord as a result thereof. In connection therewith, Tenant shall promptly take all such actions or cause the responsible party to take all such actions to arrange for the assessment, monitoring, cleanup, containment, removal, remediation and/or restoration of the Premises as are required pursuant to any of the Environmental Laws or by any Governmental Authority, provided, however, that prior to taking any such actions, Tenant shall submit a plan of all such actions to be taken to Landlord for its prior approval, which approval shall not be unreasonably withheld, delayed or conditioned, and in any event, with respect to any release to the environment, shall achieve a Class A-1 or a Class A-2 Response Action Outcome (as those terms are defined in the Massachusetts Contingency plan, 310 CMR 40.0000, et seq).

(c) Tenant, at its sole cost and expense, shall indemnify, exonerate and save harmless Landlord, its successors and assigns, against and from any and all Claims arising from or out of any violation of the terms of this Section 7.5 by or on behalf of Tenant, or the failure of Tenant to fully satisfy its obligations under this Section 7.5.

(d) For the purposes of this Section 7.5, the term "**to Landlord's knowledge**" shall mean only to the actual knowledge of Steven C. Marsh and John P. McQuaid, and shall not be construed to refer to the knowledge of any other partner, beneficial owner, officer, employee or agent of Landlord, nor shall such term impose any duty to investigate the matters to which such knowledge, or the absence thereof, pertains. There shall be no personal liability on the part of either Steven C. Marsh and John P. McQuaid arising out of any representations or warranties made herein or otherwise.

ARTICLE VIII.
INDEMNITY, LIENS AND INSURANCE

8.1 Tenant's Indemnification. Except to the extent arising out of the gross negligence or willful misconduct of Landlord, Tenant agrees to pay and to defend, indemnify and hold harmless Landlord from and against any and all liabilities, losses, damages, costs, expenses (including all reasonable attorney's fees and expenses of Tenant and Landlord), causes of action, suits, claims, demands or judgments of any nature whatsoever (including reasonable attorney's fees and expenses) arising from or alleged to arise from:

(a) any injury to or death of, or claim of injury to or death of, any person, or any damage to or loss of, or claim of damage to or loss of, property on the Premises or on adjoining sidewalks, streets or ways, in each case growing out of or connected with the use, non-use, possession, ownership, condition or occupation of the Premises or any part thereof;

(b) violation of any agreement or condition of this Lease by Tenant;

(c) violation by Tenant of any contract or agreement to which Tenant is a party or any Permitted Encumbrance or of any Legal Requirement; and

(d) any contest referred to in Section 4.7 hereof.

Landlord shall give Tenant prompt and timely notice of any claim made or suit filed against Landlord or any other party of which Landlord has knowledge, relating to any matter which in any way may result in indemnification pursuant to this Section 8.1. Subject to the prior rights, if any, of insurers, Tenant shall be entitled to control the defense and compromise of any such claim or suit to the extent of any actual or potential claim for indemnification made or reserved by Landlord (as well as any claim made against Tenant or any of those for whom it is legally responsible), and Tenant shall give Landlord the opportunity to participate in the defense and any compromise of any such claim or suit to the extent of Landlord's interest therein, but Tenant shall not settle any proceeding or claim without Landlord's prior written approval, not to be unreasonably withheld, conditioned or delayed. The obligations of Tenant under this Section 8.1 shall survive the expiration or any earlier termination of the Term of this Lease.

8.2 Landlord's Indemnification Unless caused by the negligence or willful misconduct of any of the Tenant Parties, Landlord agrees to pay and to defend, indemnify and hold harmless Tenant from and against any and all liabilities, losses, damages, costs, expenses (including all reasonable attorney's fees and expenses of Landlord and Tenant), causes of action, suits, claims, demands or judgments of any nature whatsoever (including reasonable attorney's fees and expenses) arising from or alleged to arise from an injury or death of, or claim of injury to or death of, any person or any damage to or loss of, or claim of damage or loss of, property arising directly and solely as a consequence of the gross negligence or willful misconduct of Landlord.

Tenant shall give Landlord prompt and timely notice of any claim made or suit filed against Tenant or any other party of which Tenant has knowledge, relating to any matter which in any way may result in indemnification pursuant to this Section 8.2. Subject to the prior rights, if any, of insurers, Landlord shall be entitled to control the defense and compromise of any such claim or suit to the extent of any actual or potential claim for indemnification made or reserved by Tenant (as well as any claim made against Landlord or any of those for whom it is legally responsible), and Landlord shall give Tenant the opportunity to participate in the defense and any compromise of any such claim or suit to the extent of Tenant's interest therein, but Landlord shall not settle any proceeding or claim without Tenant's consent, not to be unreasonably withheld, conditioned or delayed. The obligations of Landlord under this Section 8.2 shall survive the expiration or any earlier termination of the Term of this Lease.

8.3 Liens. Tenant shall make, or cause to be made, prompt payment of all monies due and legally owing to all Persons doing any work, furnishing any materials or supplies or renting any equipment to Tenant or any of its contractors or subcontractors in connection with the development, construction, reconstruction, furnishing, repair, maintenance or operation of the Premises and in all events will bond or cause to be bonded, with surety companies reasonably satisfactory to Landlord, or pay or cause to be paid in full forthwith, any mechanic's, materialmen's or other lien or encumbrance that arises against the Premises or any part thereof other than Leasehold Mortgages within thirty (30) days after notice thereof. Notwithstanding the foregoing, Tenant shall have the right to contest any such lien or encumbrance. Nothing contained in this Lease shall be construed as constituting the consent or request of Landlord, expressed or implied, to or for the performance of any labor or services or the furnishing of any materials for any construction, alteration, addition, repair or demolition of or to the Premises, the Improvements or of any part thereof. Notice is hereby given that Landlord will not be liable for any labor, services or materials furnished or to be furnished to Tenant, or to anyone occupying the Premises or any part thereof through or under Tenant, or holding an interest therein (other than Landlord) and that no mechanic's or other liens for any such labor, services or materials shall attach to or affect the interest of Landlord in and to the Premises or any part thereof.

8.4 Insurance Requirements. Beginning on the Commencement Date and with respect to the Premises, and continuing until the expiration or earlier termination of the Term or such later date that Tenant or anyone claiming by, through or under Tenant remains in the Premises, Tenant shall at all times carry such liability, workers' compensation, property and other insurance coverage with respect to the Premises and any of Tenant's other insurable property and equipment therein or thereon (all of the above known as the "**Insurable Property**") as may be required from time to time by any Leasehold Mortgagee, but in no event shall Tenant carry less than the following:

(a) Commercial general liability (and excess liability) insurance applicable to the Insurable Property naming Landlord and any other parties designated by Landlord as additional insureds and covering the legal liability of Landlord (as respects this asset) and Tenant for death and bodily and other personal injury with a combined single limit of [redacted] (portions of which liability and property damage coverages may be provided under an umbrella policy) with commercially reasonable deductibles;

(b) worker's compensation insurance required by law;

(c) demolition and debris removal insurance (if not included as part of the insurance carried pursuant to clause (d) below) payable in the event that the debris or demolition is occasioned by damage to or destruction of the Improvements or any portion thereof, including any casualty pursuant to Article IX hereof, or, to the extent such insurance is available, by condemnation pursuant to Article X hereof, in each case sufficient to pay for the removal of any portion of the Improvements, if required pursuant to Article IX or X hereof;

(d) special form property insurance and additional risk insurance, such insurance to be in amounts sufficient to comply with any co-insurance clause applicable to the location and character of the Insurable Property and, in any event, in amounts not less than one hundred percent (100%) of the then repair and replacement cost of the Insurable Property, with commercially reasonable deductibles, provided, however, that earthquake insurance shall be for the maximum economically available amounts and need not be for one hundred percent (100%) of the full replacement cost of the Insurable Property, but shall be for no less than ninety percent (90%) of the full replacement cost of the Insurable Property;

(e) during any construction periods, Tenant shall carry or cause to be carried builder's risk coverage in amounts appropriate for the construction work undertaken;

(f) rent insurance to cover Base Rent and Taxes for at least eighteen (18) months, including but not limited to periods of time when the Premises are unusable by reason of casualty pursuant to Article IX (if not included as part of the insurance carried pursuant to subsection (d) above; and

(g) upon Landlord's written request, such other insurance carried by prudent owners of property similar to and in the vicinity of the Premises.

All insurance contained in clauses (c) and (d) of this Section 8.4 shall be concurrent with the insurance required under clause (e) of this Section 8.4. The minimum coverages stated in this Section shall be reviewed annually by Landlord and Tenant and shall be increased at such intervals if such increases are necessary to reflect (1) changes in amounts of such insurance customarily carried by prudent owners of comparable properties in the City of Cambridge, (2) inflation or (3) changes in the nature or degree of risks insured.

8.5 Insurance Provisions. Insurance maintained by Tenant pursuant to the requirements of Section 8.4 shall:

(a) be by standard policies, obtained from financially sound and responsible insurance companies authorized to do business in the Commonwealth Massachusetts;

(b) have attached thereto a clause making the loss payable to Tenant, any Leasehold Mortgagee, and Landlord as their respective interests may appear;

(c) be written to become effective at the time Tenant becomes subject to the risk or hazard covered thereby, and shall be continued in full force and effect for such period as Tenant is subject to such risk or hazard; and

(d) provide that any cancellation, change or termination of such insurance relating to the Insurable Property shall not be effective with respect to Landlord or any Leasehold Mortgagee until after at least thirty (30) days' prior notice has been given to Landlord and the Leasehold Mortgagee to the effect that such insurance policies are to be canceled, changed, or terminated at a particular time.

Certificates of such policies and renewals, showing the issuance and effectiveness of each such policy and the amount of coverage afforded thereby, shall be filed with Landlord.

8.6 Waiver of Subrogation. Landlord and Tenant each hereby waives on behalf of itself and its property insurers (none of which shall ever be assigned any such claim or be entitled thereto due to subrogation or otherwise) any and all rights of recovery, claim, action, or cause of action against the other and its agents, officers, servants, partners, shareholders, or employees (collectively, the "**Related Parties**") for any loss or damage that may occur to or within the Premises or any part thereof, or any personal property of such party therein which is insured against under any property insurance policy actually being maintained by the waiving party from time to time, even if not required hereunder, or which would be insured against under the terms of any insurance policy required to be carried or maintained by the waiving party hereunder, whether or not such insurance coverage is actually being maintained, including, in every instance, such loss or damage that may be caused by the negligence of the other party hereto and/or its Related Parties. Landlord and Tenant each agrees to cause appropriate clauses to be included in its property insurance policies necessary to implement the foregoing provisions.

ARTICLE IX.
CASUALTY

9.1 Collection of Claims. If the Improvements or any portion thereof shall be damaged or destroyed by fire or other casualty prior to the expiration of the Term, Tenant shall proceed promptly to establish and collect as soon as reasonably possible all valid claims which may have arisen against insurers or others based upon any such damage or destruction. The provisions of this Section 9.1 shall survive the expiration or earlier termination of this Lease.

9.2 Special Account. If the total amount of all proceeds of any such claims (hereinafter called the "**Insurance Proceeds**") and any other monies provided for the reconstruction, restoration or repair of the Improvements shall exceed the greater of (a) [redacted] or (b) [redacted] of the fair market value of the Improvements, the same shall be paid into an escrow account, with a single escrow agent which

shall be appointed jointly by Tenant and Landlord, both parties agreeing to use good faith, reasonable efforts to agree on such appointment. Notwithstanding the above, in the event that a Leasehold Mortgage is in force and effect, the Leasehold Mortgagee shall have the right to appoint such escrow agent, which right shall include the ability to appoint itself such escrow agent. Payments from such escrow account shall conform to the requirements of this Article and any Leasehold Mortgage and, in the event of restoration, shall be made on a progress payment basis against vouchers certified by a registered architect selected by Tenant and supervising the work of restoration and shall be subject to reasonable retainage.

9.3 Restoration. Unless otherwise determined in accordance with Section 9.5, Tenant shall fully repair and reconstruct the Improvements either to their condition immediately prior to such damage or destruction or in accordance with such new or modified plans and specifications as Tenant, Landlord and, to the extent required under any Leasehold Mortgage, the Leasehold Mortgagee may at the time agree upon and approve, subject to any applicable building and zoning laws or other applicable Legal Requirements then in existence. Insurance Proceeds and any other funds so collected shall be used and expended by Tenant for such purpose. Any deficiency shall be paid by Tenant and Tenant's obligation hereunder shall not be affected by the unavailability or insufficiency of Insurance Proceeds or the use of the Insurance Proceeds by Leasehold Mortgagee to pay down the outstanding amount of the Leasehold Mortgage as permitted in Section 9.6 hereof. Subject to the terms of any Leasehold Mortgage, any excess proceeds after such repair or reconstruction has been fully completed shall be retained by Tenant, subject to the rights of Landlord to require that such excess be applied to the extent necessary to pay any outstanding Base Rent, Additional Rent and other amounts owed by Tenant to Landlord pursuant to this Lease.

9.4 Commencement and Completion of Restoration. Tenant shall commence such reconstruction or repair of the damaged Improvements within a period not to exceed ninety (90) days after the Insurance Proceeds have been received by Tenant (or, if the conditions then prevailing require a longer period, such longer period as shall reasonably be required by Tenant proceeding with due diligence), and Tenant shall diligently prosecute such reconstruction or repair to completion, with such reconstruction or repair to be completed within two (2) years after the commencement thereof. In furtherance of the foregoing, to the extent all or any portion of the Premises is not subject to a Sublease ("**Unleased Space**") on the date that Tenant would otherwise be required to commence such reconstruction or repair, Tenant shall not be required to commence such reconstruction or restoration of the tenant improvements in Unleased Space until after a Sublease has been executed and plans for improvements have been finalized for such Unleased Space. Notwithstanding anything to the contrary, in the event that such reconstruction or repair is not complete prior to the expiration or earlier termination of the Term, then the Insurance Proceeds, or the remaining balance thereof, shall be assigned and delivered to Landlord.

9.5 Casualty During Last 5 Years of the Term. In the event of substantial damage or destruction by a casualty insured against occurring during the last five (5) years of the Term, then Tenant, subject to the rights of any Leasehold Mortgagee, shall have the right to terminate this Lease upon thirty (30) days' notice to Landlord, in which event the Insurance Proceeds (or a sum equivalent to such amount) shall be payable as set forth in Section 9.6. For purposes of this Section 9.5, such damage or destruction shall be deemed "substantial" only if the period of time reasonably necessary for Tenant to perform its restoration obligations exceeds [redacted] of the balance of the Term (measured from the date of such casualty).

9.6 Allocation of Proceeds. If Tenant elects to terminate this Lease in accordance with Section 9.5, then to the extent Landlord has made a request pursuant to Section 9.7 below, after deducting the Clearing Costs from the Insurance Proceeds (the "**Net Proceeds**"), the Net Proceeds shall be allocated between and paid to Landlord and Tenant in order that following the disbursement of the Net Proceeds, each has received an amount of the Net Proceeds bearing the same proportion to the aggregate Net Proceeds as its respective interest in the Premises bears to the aggregate value of the Premises immediately prior to

the casualty giving rise to termination of this Lease. Landlord and Tenant shall attempt to allocate the Net Proceeds between Landlord and Tenant fairly to effect such allocation. If the parties are unable to agree on such allocation, the allocation shall be made pursuant to arbitration in the manner provided in Section 16.5 hereof. In determining the value of Tenant's interest in the Premises, the parties or the arbitrators, as the case may be, shall take into account the present value of Tenant's leasehold estate for the remainder of the Term unencumbered by any mortgages, subject to all of the terms and conditions of this Lease. In determining the value of Landlord's interest in the Premises, the parties or the arbitrators, as the case may be, shall take into account the present value of (i) the right to receive rent and other charges and payments required to be paid under this Lease for the balance of the Term, and (ii) the projected residual value of the Improvements as of the originally scheduled expiration of the Term. Notwithstanding the foregoing, in the event that a Leasehold Mortgage is then in effect, then the Net Proceeds shall be disbursed in accordance with the terms of such Leasehold Mortgage and the Leasehold Mortgagee that is the holder thereof shall have a claim to such Net Proceeds prior to that of Tenant and Landlord to pay the outstanding amounts secured by such Leasehold Mortgage to the extent required or permitted under such Leasehold Mortgage or to otherwise disburse the Net Proceeds in accordance with the terms thereof.

9.7 Tenant's Responsibilities on Termination. If Tenant terminates this Lease following a casualty in accordance with Section 9.5 or if restoration is not complete prior to end of the Term, Tenant, at its sole expense, shall deliver to Landlord any plans or other technical materials related to the design and construction of the Improvements, which may be in Tenant's possession, and, at the request of Landlord, shall remove any remaining Improvements and restore the Premises to a cleared and safe condition and at a grade approximately level with abutting land. Upon the completion of any such demolition or other site preparation work to the reasonable satisfaction of Landlord and the payment of such Net Proceeds to Landlord (or to the Leasehold Mortgagee as provided in Section 9.6 hereof), Tenant shall surrender the Premises to Landlord in accordance with Section 5.7 of this Lease and this Lease shall be terminated without liability or further recourse to the parties hereto except for obligations which by their terms expressly survive the expiration or earlier termination of this Lease, provided that any Base Rent, Additional Rent, and other amounts payable or obligations owed by Tenant to Landlord as of the date of said termination shall be paid or otherwise carried out in full. The provisions of this Section 9.7 shall survive the expiration or earlier termination of the Term.

9.8 Demolition and Debris Removal Insurance. Proceeds of demolition and debris removal insurance, if separately obtained pursuant to Section 8.4(c) hereof, shall be separately accounted for by the escrow agent and shall be used to the extent available to pay the cost of any such demolition and debris removal occasioned by a casualty unless otherwise agreed by Landlord, Tenant and any Leasehold Mortgagee named as a loss payee on the policy of demolition and debris removal insurance, with Tenant responsible for paying any shortfall between such proceeds and the cost of such demolition and debris removal.

ARTICLE X.
CONDEMNATION

10.1 A Taking. This Article shall apply to any taking of the title to, access to, or use of the Premises or any portion thereof by any Governmental Authority or any conveyance under the threat thereof, for any public or quasi-public use or purpose (a "**Taking**"). Takings may be total or partial, permanent or temporary, as provided below.

10.2 Special Account. The full amount of any award whether pro tanto or final for any Taking (the "**Award**"), shall, notwithstanding any allocation made by the awarding authority, be paid into an escrow account in accordance with the procedures established in Section 9.2 above, provided that there shall first be deducted from the Award all reasonable fees and expenses of collection, including but not

limited to, reasonable attorneys' fees and experts' fees (the "**Net Award**"). Landlord and Tenant shall then attempt to fairly allocate (taking into account any restoration obligation of Tenant) the Net Award between Landlord's interest in the Premises and Tenant's interest in the Premises for the remainder of the Term of this Lease, taking into account their respective interests, any existing appraisals used to determine (or to contest) the amount of the Award and any other relevant information and analysis. If the parties are unable to agree on such allocation, the allocation shall be made pursuant to arbitration in the manner provided in Section 16.5 hereof. Upon determination of the allocation of the Net Award between Landlord and Tenant, either by agreement of the parties or by decision of the arbitrators, Landlord's portion thereof shall be paid forthwith to Landlord, and Tenant's portion shall be paid as provided in this Article X. The portion of the Net Award so allocated to Landlord shall be known herein as "**Landlord's Award**," and the portion so allocated to Tenant shall be known herein as "**Tenant's Award**." Notwithstanding the foregoing, a Leasehold Mortgagee shall have a claim to the Net Award prior to that of Tenant and Landlord to pay outstanding amounts secured by a Leasehold Mortgage to the extent required under such Leasehold Mortgage.

10.3 Total Taking. In the event of a permanent Taking of the fee title to or of control of the Premises or of the entire leasehold estate hereunder (a "**Total Taking**"), Tenant, upon the request of Landlord and at Tenant's sole expense, shall deliver to Landlord any plans or other technical materials related to the design and construction of the Improvements that Tenant has in its possession. Landlord and Tenant hereby agree that this Lease shall terminate as of the effective date of such Total Taking, and except with regard to provisions hereof which expressly survive termination, there shall be no liability or further recourse to the parties under the terms and provisions of this Lease, provided that any Base Rent, Additional Rent, other charges payable or any other monetary obligations due and owing by Tenant to Landlord as of the date of said Total Taking shall be paid or otherwise carried out in full.

10.4 Restoration. In the event of a permanent Taking of less than all of the Premises (a "**Partial Taking**"), Landlord and Tenant (and, to the extent required under the applicable Leasehold Mortgage, the Leasehold Mortgagee) shall reasonably agree upon and approve plans and specifications to modify the remaining Improvements, which plans and specifications shall be subject to any applicable building and zoning laws and other Legal Requirements then in existence. Upon approval of said plans, Tenant shall promptly proceed, at its expense, to commence and complete the restoration pursuant to the provisions of Section 9.3 hereof. Subject to the procedures of the escrow account set forth in Section 9.2 hereof, Tenant may use the entire Tenant's Award for such restoration, and, subject to the rights of any Leasehold Mortgagee, may retain for its own use any portion of Tenant's Award remaining after the completion of the restoration subject to the rights of Landlord to require that any such excess be applied first to the extent necessary to pay any outstanding Base Rent, Additional Rent and other amounts owed by Tenant to Landlord pursuant to this Lease. If the cost of the restoration shall exceed the amount of Tenant's Award, subject to the provisions of Section 6.2(k), the deficiency shall be paid by Tenant and Tenant's obligation hereunder shall not be affected by the unavailability or insufficiency of Tenant's Award or the use all or a portion of the Net Award by Leasehold Mortgagee to pay down the outstanding amount of the Leasehold Mortgage as permitted in Section 10.2 hereof.

10.5 Temporary Taking. If the use or occupancy of the Premises or any part thereof shall be temporarily requisitioned by any Governmental Authority, civil or military (including, without limitation, any requisition or Taking arising out of the exercise of governmental war powers or any other emergency governmental powers) (a "**Temporary Taking**"), then, subject to the prior rights of any Leasehold Mortgagee in and to the Net Award as provided in Section 10.2, any Net Award made as a result of such Temporary Taking shall be payable solely to Tenant if the duration of such Temporary Taking is wholly within the Term, and this Lease shall continue in full force and effect and there shall be no abatement of Rent as a result thereof. If the Temporary Taking extends beyond the expiration or earlier termination of this Lease, then a pro-rata portion (based on a fraction, the numerator of which is the number of days of such Temporary Taking occurring within the Term, and the denominator of which is the number of days of the Temporary Taking) of such award shall be payable to Tenant.

10.6 Abatement of Rent. In the event of a Partial Taking, each monthly installment of Base Rent payable hereunder shall be equitably reduced, commencing with the first rent payment date following the effective date of such Partial Taking. If Landlord and Tenant cannot reasonably agree upon an equitable reduction in the Base Rent payable hereunder, such reduction shall be determined through arbitration pursuant to Section 16.5 below.

10.7 Demolition and Debris Removal Insurance. Proceeds of demolition and debris removal insurance required pursuant to Section 8.4(c) hereof, shall be separately accounted for by the escrow agent and shall be used to the extent available to pay the cost of any such demolition and debris removal occasioned by a casualty unless otherwise agreed by Landlord, Tenant and any Leasehold Mortgagee, and shall name Landlord, Tenant and any Leasehold Mortgagee as loss payees, as their interests appear, on the policy of demolition and debris removal insurance, with Tenant responsible for paying any shortfall between such proceeds and the cost of such demolition and debris removal.

ARTICLE XI.
DEFAULT; REMEDIES

11.1 Events of Default. An event of default ("**Event of Default**") by Tenant shall occur:

(a) if Tenant fails to pay when due the Rent, any Additional Rent or any other payments due under this Lease and any such default shall continue for fifteen (15) days after receipt of written notice thereof by Tenant; or

(b) if Tenant fails in any material respect to observe or perform any covenant, condition, agreement or obligation hereunder, and shall fail to cure, correct or remedy such failure within thirty (30) days after receipt of written notice thereof by Tenant (or such additional time reasonably necessary if such failure cannot be cured by the payment of money and cannot with due diligence be cured within a period of thirty (30) days provided Tenant commences cure within said 30-day period and pursues such cure to completion with reasonable diligence; or

(c) if any representation or warranty of Tenant set forth in this Lease, in any certificate delivered pursuant hereto, or in any notice, certificate, demand, submittal or request delivered to Landlord by Tenant pursuant to this Lease shall prove to be incorrect in any material and adverse respect as of the time when the same shall have been made and the same shall not have been remedied to the satisfaction of Landlord; or

(d) if Tenant shall be adjudicated bankrupt or be declared insolvent under the Federal Bankruptcy Code or any other federal or state law (as now or hereafter in effect) relating to bankruptcy, insolvency, reorganization, winding-up or adjustment of debts (hereinafter collectively called "**Bankruptcy Laws**"), or if Tenant shall (a) apply for or consent to the appointment of, or the taking of possession by, any receiver, custodian, trustee, United States Trustee or liquidator (or other similar official) of Tenant or of any substantial portion of Tenant's property; (b) generally not pay its debts as they become due or admit in writing its inability to pay its debts generally as they become due; (c) make a general assignment for the benefit of its creditors; (d) file a petition commencing a voluntary case under or seeking to take advantage of any Bankruptcy Law; or (e) fail to controvert in a timely and appropriate manner, or in writing acquiesce to, any petition commencing an involuntary case against Tenant pursuant to any Bankruptcy Law; or

(e) if an order for relief against Tenant shall be entered in any involuntary case under the Federal Bankruptcy Code or any similar order against Tenant shall be entered pursuant to any other Bankruptcy Law, or if a petition commencing an involuntary case against Tenant or proposing the reorganization of Tenant under the Federal Bankruptcy Code shall be filed in and approved by any court of competent jurisdiction and not be discharged or denied within one hundred twenty (120) days after such filing, or if a proceeding or case shall be commenced in any court of competent jurisdiction seeking (a) the liquidation, reorganization, dissolution, winding-up or adjustment of debts of Tenant, (b) the appointment of a receiver, custodian, trustee, United States Trustee or liquidator (or other similar official of Tenant or of any substantial portion of Tenant's property, or (c) any similar relief as to Tenant pursuant to any Bankruptcy Law, and any such proceeding or case shall continue undismissed, or any order, judgment or decree approving or ordering any of the foregoing shall be entered and continued unstayed and in effect for one hundred twenty (120) days.

11.2 Remedies for Default. If there is an Event of Default on the part of Tenant and no condition precedent to any obligation of Tenant exists unfulfilled or unwaived, Landlord, subject to the rights of the Leasehold Mortgagee set forth in Article VI, may terminate this Lease pursuant to Section 11.3 and may exercise its other remedies set forth in this Article XI.

11.3 Termination of Lease for Tenant's Default.

(a) Subject to any rights of a Leasehold Mortgagee under Article VI, Landlord may, when permitted by Section 11.2, terminate this Lease upon not less than thirty (30) additional days' written notice to Tenant, and any Leasehold Mortgagee of which it has notice, setting forth Tenant's uncured, continuing default and Landlord's intent to exercise its rights to terminate under this Section 11.3, whereupon, subject to the provisions of Article VI, this Lease shall terminate on the termination date therein set forth unless Tenant's alleged default has been cured before such termination date.

(b) Upon such termination, Tenant's interest in the Premises shall automatically revert to Landlord, Tenant shall promptly quit and surrender the Premises to Landlord, without cost to Landlord, and Landlord may, without demand and further notice, re-enter and take possession of the Premises, or any part thereof and repossess the same as Landlord's former estate by summary proceedings, ejectment or otherwise without being deemed guilty of any manner of trespass and without prejudice to any remedies which Landlord might otherwise have for arrears of Rent or for a prior breach of the provisions of this Lease. Subject to the provisions of Article VI, the obligations of Tenant under this Lease which arose prior to termination shall survive such termination.

11.4 Rights Upon Termination. Subject to the provisions of Article VI, upon any termination of this Lease pursuant to Section 11.3, Landlord may:

(a) retain, at the time of such termination, any Base Rent, Additional Rent or other fees or payments made hereunder, without any deduction, offset or recoupment whatsoever; and

(b) enforce its rights under any bond obtained by Tenant pursuant to the requirements of Section 8.3 of this Lease outstanding at the time of such termination; and

(c) require Tenant to deliver to Landlord, or otherwise effectively transfer to Landlord any and all rights of possession, ownership or control Tenant may have in and to, any and all plans, specifications, renderings, engineering data, soils or water report and other technical documents or material related to the design and construction of the Improvements and architect's and construction contracts relating to the Improvements; and

(d) recover as damages a sum equal to the amount by which the Base Rent, Additional Rent and other payments called for hereunder for what would have been the remainder of the Term exceed the fair rental value of the Premises, subject to the limitations on Tenant's liability set forth in Section 11.11 hereof.

In addition to the above remedies of Landlord, Tenant agrees to reimburse Landlord for any and all actual expenditures reasonably incurred and for any and all actual damages suffered by Landlord by reason of such termination, however caused.

11.5 Other Remedies. If there is an Event of Default on the part of Tenant, subject to the provisions of Article VI, Landlord shall, in addition to any other remedies herein provided, have the right, without terminating the Lease, to re-enter and take possession of the Premises, or any part thereof and repossess the same by summary proceedings, ejectment or otherwise. Notwithstanding the foregoing, in the event that any Leasehold Mortgagee has provided to Landlord a Notice of Leasehold Mortgagee's Intent to Exercise Remedies and is diligently and continuously pursuing its rights and/or remedies in an effort to effect a Leasehold Mortgage Foreclosure, Landlord shall not exercise the rights and remedies provided to Landlord under this Section 11.5. In the event that the Leasehold Mortgagee does not diligently and continuously pursue such Leasehold Mortgage Foreclosure, Landlord shall have the right, upon providing thirty (30) days' written notice to Tenant and Leasehold Mortgagee, to exercise the rights and remedies under this Section 11.5.

11.6 Performance by Landlord. Upon an Event of Default, Landlord may (but need not) and without waiving any default or releasing Tenant from any obligations, cure such default for the account of Tenant. Tenant shall promptly pay Landlord the amount of such charges, costs and expenses as Landlord shall have incurred in curing such default, together with interest at the Base Interest Rate.

11.7 Legal Costs. If either party prevails in any action against the other party in connection with the exercise of its rights and remedies under this Lease, the non-prevailing party shall be liable for the reasonable and actual legal expenses of the prevailing party. An award of reasonable attorneys' fees and costs shall be determined by the court. The "**prevailing party**" shall be the party that obtains final judgment in its favor. If the institution of an action to enforce the terms of this contract is resolved by settlement, the parties will determine what portion, if any, of the injured party's legal fees and costs will be paid by the breaching party.

11.8 Remedies Cumulative. Unless otherwise specifically provided in this Lease, no remedy herein shall be exclusive of any other remedy or remedies, and each such remedy shall be cumulative and in addition to every other remedy; and every power and remedy given by this Lease may be exercised from time to time and as often as may be deemed expedient by either party. No delay or omission by Landlord to exercise any right or power accruing upon any Event of Default or any tolling thereof as a result of the provisions of Article VI hereof shall impair any such right or power or shall be construed to be a waiver of any such Event of Default or an acquiescence therein. The absence in this Lease of any enumeration of events of default by Landlord or remedies of either party with respect to money damages or specific performance shall not constitute a waiver by either party of its right to assert any claim or remedy available to it under law or in equity.

11.9 Waiver as to Surety. Tenant and Landlord, for themselves and their successors and assigns, and all other persons who are or who shall become, whether by express or implied assumption or otherwise, liable upon or subject to any obligation or burden under this Lease, hereby waive, to the fullest extent

permitted by law and equity, all claims or defenses otherwise available on the grounds of its or their being or having become a person in the position of a surety, whether real, personal, or otherwise, or whether by agreement or operation of law. Such waiver shall include, but shall not be limited to, all claims and defenses based upon extensions of time, indulgence, or modification of terms of this Lease.

11.10 Force Majeure. If either party shall be delayed in performing any obligation under this Lease, except any obligation to pay Base Rent, Additional Rent or any other sums of money payable hereunder, for any of the reasons enumerated in this Section 11.10 and the delay is not caused by the delayed party, the time for such performance shall be extended by a period of time equal to such delay, and the party shall not be deemed to be in default where such delays or defaults are due to war; terrorism; insurrection; strikes; lock-outs; riots; floods; earthquakes; fires; casualties; acts of God; epidemics; quarantine; restrictions; freight embargoes; acts or failure to act of the City of Cambridge or any other Governmental Authorities that cause a significant portion of the Premises to be unusable in accordance with this Lease; acts of the other party in violation of this Lease; or any other reasonable cause relating to this Lease beyond the control or without the fault of the party claiming an extension of time to perform; provided that the party whose performance is delayed shall have commenced and is diligently pursuing all reasonable and available means and measures necessary to minimize or eliminate such delay resulting from any such causes or conditions. Each party shall give written notice of any such delay to the other party within thirty (30) days of such party's knowledge of the occurrence of such event.

11.11 Landlord Default. Notwithstanding anything to the contrary contained in the Lease, Landlord shall in no event be in default in the performance of any of Landlord's obligations under this Lease unless Landlord shall have failed to perform such obligations within thirty (30) days (or such additional time as is reasonably required to correct any such default, provided Landlord commences the cure within thirty (30) days and pursues such cure to completion with reasonable diligence) after notice by Tenant to Landlord properly specifying wherein Landlord has failed to perform any such obligation. Except in the case of a wrongful eviction of Tenant from the Premises (constructive or actual) by Landlord, Tenant shall not have the right to terminate or cancel this Lease or to withhold rent or to set-off or deduct any claim or damages against rent as a result of any default by Landlord of its covenants hereunder, provided, however, that Tenant shall not exercise such rights unless Landlord shall have failed to cure the default giving rise to the eviction after notice to Landlord thereof and an opportunity to cure the same as set forth above.

ARTICLE XII.
TRANSFER AND ASSIGNMENT

12.1 Assignment. Subject to the provisions of Section 12.2 of this Lease, Tenant shall have the right to transfer, sell or assign its interest in this Lease to any party, without the prior written consent of Landlord, provided, however, that the transferee, purchaser or assignee, as the case may be, of Tenant's interest in the Lease shall not be a Prohibited Tenant. For the purposes of this Lease, any of the following transactions shall constitute an assignment of this Lease: (i) any assignment by operation of law; (ii) a sublease of substantially all of the Premises for all or substantially all of the remainder of the Lease Term; (iii) the entering into of any transaction or series of transactions transferring all or substantially all of the interests in the profits and losses from the business operations of Tenant in the Premises to a person or entity other than Tenant, or otherwise having substantially the same effect as an assignment of the Lease; and (iv) any transfer of Tenant's interest under the Lease in connection with a foreclosure of a Leasehold Mortgage (but, with respect to any such transfer, the provisions of Article VI shall control over the provisions of this Section 12.1). Except in connection with the grant of a Leasehold Mortgage or Leasehold Mortgagee's exercise of its rights thereunder, any sale or transfer of more than fifty percent (50%) of the economic value or of managerial control (including a sale or transfer that conveys a right to institute a change in managerial control) or voting control of the entity that is Tenant or of any entity that directly or

indirectly holds more than fifty percent (50%) of the economic interests or of managerial or voting control of the entity that is Tenant to a person or persons not previously holding such economic interests or managerial control or voting control of any such entity (either in a single transaction or series of transactions) shall constitute a "**Transfer of Control**."

12.2 Right of First Offer.

(a) Throughout the Term, Tenant shall not assign its leasehold interest in the Premises nor shall there be a Transfer of Control without first giving Landlord a right of first offer with respect to Tenant's interests (the "**First Offer Right**") on the following terms and conditions. Landlord's rights under this Section shall be binding upon the original Tenant and each and every subsequent Tenant and, without limiting the general application of the foregoing, shall apply to any transaction or series of transactions other than any of Tenant Excluded Transactions (defined below) that would constitute an assignment of this Lease under Section 12.1 hereof. Before marketing or assigning its interest, Tenant shall notify Landlord in writing of the price and other significant terms and conditions (including the state of "title") on which Tenant intends to market its interest (the "**Assignment Notice**"). All such terms and conditions must be terms and conditions that are generally able to be fulfilled by any prospective purchaser. Landlord shall have thirty (30) days after delivery of the Assignment Notice either to accept Tenant's offer and to tender to an escrow agent pursuant to an escrow agreement each reasonably satisfactory to Landlord and Tenant a cash deposit equal to [redacted] of the price. If Landlord fails timely to accept Tenant's offer, Tenant, except to the extent that the proposed assignee is a Prohibited Tenant (in which event Landlord's consent to such an assignment shall be required as provided in this Section 12.2), may sell such interest to a third party within the twelve (12) month period thereafter so long as the net present value of the consideration to be received by Tenant from such transfer is not less than [redacted] of the net present value of the consideration to be received by Tenant under the terms offered to Landlord and other significant terms and conditions of such transfer are not more favorable in more than a de minimis manner to the buyer than the terms and conditions offered to Landlord. The net present value of all consideration shall be discounted to net present value at [redacted] per annum. If the net present value of the consideration to be paid on any potential sale is less than [redacted] of the net present value of the consideration to be paid under Tenant's offer to Landlord or the transfer is on other terms and conditions more favorable in more than a de minimis manner to the buyer than the terms and conditions offered to Landlord, Tenant may not sell or assign its interests unless Tenant first repeats the process set forth above prior to consummating such a sale. The First Offer Right shall not apply to any of the following transactions (the "**Tenant Excluded Transactions**"): (i) the grant of any Leasehold Mortgage, (ii) the foreclosure of a Leasehold Mortgage or the acceptance of an assignment in lieu of foreclosure, by a Leasehold Mortgagee (other than an Affiliate) or its nominee, or (iii) a conveyance by a Leasehold Mortgagee (other than an Affiliate) or its nominees to a third party pursuant to a public auction.

(b) If Landlord exercises the First Offer Right and pays any deposit, as provided herein, there shall arise a binding purchase and sale agreement between Landlord, as buyer, and Tenant, as seller, on the terms contained in Tenant's offer to Landlord for Tenant's interest in the Premises and, unless otherwise specified in Tenant's offer to Landlord, in an "as is" condition and as occupied.

(c) The closing on the purchase shall take place within ninety (90) days after Landlord's exercise of the First Offer Right (or if such date is a Saturday, Sunday or holiday, on the next following Business Day) at the office of Landlord's counsel in the Boston metropolitan area unless otherwise specified in Tenant's offer or agreed to by the parties. At the closing, except in connection with a Transfer of Control, the parties shall make the deliveries specified in Section 19.3 below (it being understood and agreed that no termination fee is payable in connection with the exercise of Landlord's rights under this Section 12.2).

(d) Time is of the essence in connection with the exercise of the First Offer Right and the performance of the agreement of the parties hereunder.

(e) In the event that Tenant proposes to assign its interest in the Premises and Landlord does not exercise its First Offer Right hereunder, Landlord, within thirty (30) days of the delivery of the Assignment Notice or such earlier date as Landlord waives, in writing, the First Offer Right, shall (i) confirm whether the proposed transferee satisfies the applicable criteria set forth in Section 12.1 (i.e., that the proposed transferee in fact is not a Prohibited Tenant) and Landlord's consent to the proposed transfer is not required, or (ii) notify Tenant with reasonable specificity what further information Landlord requires to make its determination. If Landlord does not notify Tenant in writing within the above stated time period of all specific respects in which the proposed transferee does not satisfy the applicable criteria set forth in Section 12.1, or of the further information Landlord requires to make its determination, the transfer to such proposed transferee shall be deemed approved. If Landlord requests further information concerning a proposed transferee, within fifteen (15) days of receipt of such additional information, Landlord shall confirm that the proposed transferee satisfies the applicable criteria set forth in Section 12.1, or it shall notify Tenant of the specific respects in which such proposed transferee does not satisfy the applicable criteria set forth in Section 12.1. If Landlord does not so notify Tenant within said fifteen (15)-day period, the transfer to such proposed transferee shall be deemed approved. The recording of an affidavit by Tenant to the effect that such approval has been deemed to have been received by the passage of such a period shall be conclusive evidence thereof.

ARTICLE XIII.
SUBLETTING, ESTOPPEL CERTIFICATES, AND NON-DISTURBANCE AND ATTORNMENT AGREEMENTS

13.1 Subletting. Except to the extent that a sublease is deemed an assignment of Tenant's interest in the Premises as set forth in Section 12.1 of this Lease, Tenant shall have the right to enter into any Sublease, provided that all Occupants under any Sublease shall only have the right to use the Premises in accordance with the Permitted Uses and for no other uses. Tenant shall not enter into any Sublease of any kind, or an extension of any such Sublease of any kind, for any portion of the Premises having a term which extends beyond the Term of this Lease. If Tenant shall contemplate making any Sublease not meeting the criteria set forth in the preceding two sentences, Tenant shall submit to Landlord for approval two (2) copies of such proposed Sublease, together with any information concerning the identity and financial worth of the proposed Occupant and the terms of the Sublease as Landlord may reasonably request. Tenant may also submit to Landlord in writing from time to time prior to submitting the text of such proposed Sublease, information concerning the identity and financial worth of a proposed Occupant. Landlord agrees that it will respond promptly after receipt of any such information or of such proposed Sublease, and notify Tenant whether the proposed Sublease or Occupant are approved and, if the same are not approved, the reasons for such disapproval. A copy of all Subleases shall be delivered to Landlord by Tenant within fifteen (15) days after the execution thereof. No Sublease permitted by this Section 13.1 shall impose any obligations on Landlord or otherwise affect any rights of Landlord under this Lease. In all events, Tenant shall not enter into any Sublease with any Prohibited Tenant. Notwithstanding anything to the contrary, in the event that this Lease is terminated for any reason, or if Tenant rejects this Lease in the course of a bankruptcy proceeding, in either event prior to the Expiration Date, then at Landlord's option (on a case by case basis), and subject to the provisions of Article VI hereof, the Occupants shall attorn to Landlord and recognize Landlord as landlord under the applicable Sublease, under the terms set forth in Section 13.4(b) below and otherwise under the terms and conditions and at the rental rate specified in the

applicable Sublease, and for the then remaining term of the applicable Sublease. Without limiting Tenant's obligations under Section 15.4 below, Tenant hereby agrees to provide prompt notice to Landlord of any claimed defaults under any Sublease together with copies of any written notices thereof received by Tenant.

13.2 Rent and Charges to Occupants. Tenant shall not impose or collect any rent or other charge under any Sublease in any way relating to the use or occupancy of any part of the Premises which is based on the "income" or "profits" of any person so as to render any part of the Rent payable under this Lease "unrelated business taxable income" to Landlord under Section 512 of the Internal Revenue Code of 1954 or successor provision.

13.3 Estoppel Certificates. Landlord and Tenant, as the case may be, will execute, acknowledge and deliver to each other or to the other party's actual or prospective lender, investor or transferee, within fifteen (15) Business Days after a written request therefor, a certificate certifying:

(a) that this Lease is unmodified and in full force and effect (or, if there have been modifications, that this Lease is in full force and effect as modified, and stating the modifications);

(b) the dates, if any, to which Rent and Additional Rent have been paid;

(c) whether or not, to the knowledge of Landlord or Tenant, as the case may be, there are then existing any defaults under this Lease (and if so, specifying the same); and

(d) such other matters relating to this Lease as may be reasonably required.

13.4 Non-Disturbance and Attornment Agreements.

(a) At the request of a Leasehold Mortgagee, Landlord agrees to execute and deliver to such Leasehold Mortgagee a non-disturbance agreement in a form reasonably requested by such Leasehold Mortgagee, provided such Leasehold Mortgagee executes and delivers an appropriate attornment agreement.

(b) At the request of Tenant, Landlord agrees to execute and deliver to Occupants non-disturbance agreements containing reasonable terms on forms approved by Landlord and prepared by Tenant, provided that (i) any such Occupant also executes and delivers an attornment agreement containing commercially reasonable terms, (ii) if any such request relates to a Sublease or proposed Sublease which was not previously approved by Landlord pursuant to Section 13.1, Tenant shall provide a copy of such Sublease or proposed Sublease to Landlord concurrently with such request (if Tenant has not previously provided a copy of such Sublease to Landlord), and (iii) Landlord shall not be obligated to assume any obligations to lease or otherwise provide or make available to the Occupant space or appurtenant rights (including without limitation, parking) at or relating to any property other than the Premises unless the owner of such property grants such space or appurtenant rights to Landlord for the duration of such sublease or proposed sublease (an "**Appurtenant Grant**"), in which event Landlord shall agree to provide or make available such space or appurtenant rights subject to the terms of the Appurtenant Grant. If Landlord reasonably believes that any Occupant's Sublease violates Section 5.1, or otherwise constitutes a breach of obligations contained in a Leasehold Mortgage or this Lease then, Landlord shall have no obligation to execute and deliver a non-disturbance agreement with respect thereto.

ARTICLE XIV.
NON-DISCRIMINATION AND AFFIRMATIVE ACTION

14.1 Compliance with Equal Opportunity Laws and Regulations. Tenant shall comply with all applicable Legal Requirements in effect from time to time pertaining to Equal Employment, Anti-Discrimination and Affirmative Action, including executive orders and rules and regulations of appropriate Governmental Authorities, unless Tenant is otherwise exempt therefrom.

14.2 Information and Reports. Tenant will provide all information and reports pertinent to Landlord's Equal Employment, Anti-Discrimination and Affirmative Action requirements reasonably requested by Landlord and will permit access to its facilities and any of its books, records, or other sources of information which may be reasonably determined by Landlord to affect Tenant's obligation hereunder.

14.3 Notices to Occupants, Contractors and Vendors. Tenant will include the provisions of Section 14.1 with every contract or purchase order, and will require the inclusion of these provisions in every subcontract entered into by any of its contractors and vendors, so that such provisions will be binding upon each such contractor and vendor, as the case may be.

ARTICLE XV.
REPRESENTATIONS AND WARRANTIES; AFFIRMATIVE COVENANTS

15.1 Representations and Warranties. The parties hereto each represent and warrant with respect to themselves:

(a) The execution hereof and the performance of the obligations herein described have been duly authorized by each of the respective parties.

(b) Each party has full power and authority to enter into this Lease and this Lease and any agreements to be executed herewith or pursuant hereto are or will be, upon execution, the duly executed, legal, valid and binding obligations of each of the respective parties, enforceable in accordance with their terms as the same may be limited by bankruptcy, insolvency or similar laws affecting the rights of creditors generally.

(c) This Lease and the agreements to be executed herewith are not in conflict with any joint venture agreement, charter, statutory authority, or any indenture agreement or other instrument to which any party hereunder is a party or by which any party hereto is bound.

(d) There is no litigation or administrative proceeding pending or anticipated which would in any material way affect the ability of the party making the warranty to carry out its obligations under this Lease or which would otherwise materially affect the Premises.

15.2 Maintenance of Business and Existence. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant shall do all things necessary to preserve, renew, and keep in full force and effect its corporate existence and rights and franchises necessary to continue its business and preserve and keep in force and effect all licenses and permits necessary for the proper conduct of its business, unless prior written approval of Landlord is obtained.

15.3 Conduct of Business. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will conduct and maintain the business of the operation of the Premises in compliance, in all material respects, with all applicable Legal Requirements and in accordance with this Lease.

15.4 Notification of Defaults. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will promptly notify Landlord of default or breach of conditions, if any, in connection with the payment or performance of any other material obligation of Tenant, whether or not the applicable creditor or obligee elects to declare the obligations of Tenant under the applicable agreement due and payable or to exercise any other right or remedy available to such creditor or obligee, if such creditor's or obligee's rights and remedies may involve or result in (i) the taking of possession of the Premises or (ii) the assertion of any other right or remedy that may impair Tenant's ability to punctually perform all of its obligations under this Lease.

15.5 Notification of Disputes. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will promptly notify Landlord of any materially adverse claims, actions or proceedings affecting the Premises or the performance of its obligations under this Lease.

15.6 Notification of Attachments. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will promptly notify Landlord of any levy, attachment, execution or other process against its assets, which will materially adversely affect the Premises or the performance of its obligations under this Lease.

15.7 Reports. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will provide Landlord with copies of any reports that it furnishes to or receives from any Governmental Authorities relative to the Premises, provided that from and after any Leasehold Mortgage Foreclosure, any Transferee shall only be required to provide to Landlord a copy of any notice received by such Transferee from any Governmental Authority alleging a violation of any Legal Requirement relating to the Premises.

15.8 Further Assurances. Upon request, Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will execute and deliver, or cause to be executed and delivered, such further instruments and do or cause to be done such further acts, as may reasonably be necessary or proper to carry out the intent and purpose of this Lease.

15.9 Current Information. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will promptly furnish Landlord from time to time current information which changes in any material adverse manner information previously submitted to Landlord by Tenant.

15.10 Reimbursement Rights. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will reimburse Landlord for all reasonable legal expenses incurred by Landlord in connection with all requests by Tenant for consent, approval or review of any documents requested (a) in connection with any Leasehold Mortgage, (b) if Landlord's consent or approval is required under the terms of this Lease, and (c) in connection with any recognition agreement described in Article XII. Landlord will reimburse Tenant for all reasonable legal expenses incurred by Tenant in connection with all requests by Landlord for consent, approval or review of any documents requested (i) in connection with any Fee Mortgage and (ii) if Tenant's consent or approval is required under the terms of this Lease.

15.11 General Tenant Covenant. Tenant hereby covenants and agrees that, during the Term of this Lease, Tenant will perform and observe, or cause to be performed and observed, all the terms, covenants, conditions and agreements provided in this Lease and in any amendments hereto to be performed or observed by Tenant.

15.12 General Landlord Covenant. Landlord hereby covenants and agrees that, during the Term of this Lease and with regard to matters related to this Lease, Landlord will perform and observe, or cause to be performed and observed, all the terms, covenants, conditions and agreements provided in this Lease and in any amendments hereto to be so performed and observed by Landlord.

15.13 No Material Interference. Landlord hereby covenants and agrees that, during the Term of this Lease and with regard to matters related to this Lease, Landlord shall refrain from taking any action that would impose deed restrictions or other encumbrances on title that would materially interfere with or adversely affect (a) Tenant's ability to exercise its rights and fulfill its obligations under this Lease, or (b) the marketability of title or the market value of the Premises. Any Fee Mortgage granted by Landlord shall be expressly subject and subordinate to this Lease (and any new lease entered into pursuant to Section 6.4) and concurrently with the execution and delivery of any Fee Mortgage, Landlord shall obtain and deliver to Tenant a commercially reasonable agreement by the applicable Fee Mortgagee, pursuant to which (x) the applicable Fee Mortgagee consents to this Lease, acknowledges that the Fee Mortgage is subject and subordinate to this Lease (and any new lease entered into pursuant to Section 6.4), agrees that with respect to any and all Net Proceeds recovered or recoverable in connection with a fire or other casualty relating to the Premises, and with respect to any and all Net Awards recovered or recoverable in connection with any Taking, the rights of the Leasehold Mortgagee as set forth in this Lease shall be superior, in all respects, to the rights of the Fee Mortgagee and agrees that, notwithstanding the terms of the applicable Fee Mortgage held by such Fee Mortgagee, or any default, expiration, termination, foreclosure, sale, entry or other act or omission under or pursuant to such Fee Mortgage, or the Fee Mortgagee's exercise of any of its rights and/or remedies under the Fee Mortgage or a transfer in lieu of foreclosure, Tenant shall not be disturbed in peaceful enjoyment of the Premises nor shall this Lease be terminated or cancelled at any time, except in the event that Landlord shall have the right to terminate this Lease under the terms and provisions expressly set forth herein and (y) Tenant shall agree that Tenant will attorn to and recognize such Fee Mortgagee or the purchaser at any foreclosure sale or any sale under a power of sale contained in any such Fee Mortgage or the transferee accepting an assignment in lieu of foreclosure as Landlord under this Lease for the balance of the Term of this Lease then remaining.

ARTICLE XVI.
MISCELLANEOUS PROVISIONS

16.1 Designation of Authorized Representatives. Landlord and Tenant shall each designate an authorized representative or representatives to be responsible for granting the approvals and concurrences required pursuant to this Lease and for maintaining communications between the parties. Landlord hereby designates the Manager of Landlord as the party in charge of Landlord's interest in the Premises and further designates Steven C. Marsh, and/or such other Persons as Landlord may designate from time to time, as the authorized representative for Landlord for purposes of this Lease. Tenant hereby designates the Manager of Tenant as the party in charge of Tenant's interest in the Premises and further designates Steven C. Marsh, and/or such other Persons as Tenant may designate from time to time, as the authorized representative for Tenant for the purposes of this Lease. Each party shall be entitled to rely on concurrences or approvals of the other party's authorized representative until such time as a party receives notice from the other party revoking the authority of such authorized representative and designating a replacement.

16.2 No Merger of Title. There shall be no merger of the leasehold estate created by this Lease with the fee estate in the Premises by reason of the fact that the same person or entity may own or hold (a) the leasehold estate created by this Lease or any interest in such leasehold estate, and (b) the fee estate in the Premises or any interest in such fee estate; and no such merger shall occur without the prior written consent of any Leasehold Mortgagee (which consent may be withheld in the Leasehold Mortgagee's sole and absolute discretion) unless and until all Persons, including Landlord, any Fee Mortgagee and any Leasehold Mortgagee, having any interest in (i) the leasehold estate created by this Lease, or (ii) the fee estate in the Premises, shall join in a written instrument affirming their intent to effect such merger and shall duly record the same.

16.3 No Waiver. The failure of either party to insist in any one or more cases upon the strict performance of any of the covenants of this Lease, or to exercise any option or election herein contained, shall not be construed as a waiver or relinquishment for the future of such covenant, option or election unless this Lease specifies otherwise. A receipt by Landlord of Rent with knowledge of the breach of any covenant herein shall not be deemed a waiver of such breach.

16.4 No Broker. Landlord and Tenant each represents to the other that there was no broker involved in consummating this Lease and that, to the best of its knowledge, there is no broker entitled to a commission in connection with this Lease.

16.5 Arbitration. Whenever, pursuant to the terms of this Lease, Tenant and Landlord cannot agree upon, under the provisions of Article X or Article IX, the allocation of the Net Award, the allocation of Net Proceeds, or the amount of any abatement of Rent under Section 10.6 hereof, the following procedure shall be followed: If the parties cannot agree upon the matter to be determined, then the determination of such matter, upon the election of either Landlord or Tenant, shall be submitted to arbitration as follows: the matter shall be determined by impartial arbitrators, one to be chosen by Tenant, one to be chosen by Landlord, and a third to be selected, if necessary, as below provided. Such impartial arbitrators shall be qualified, independent real estate professionals with experience with properties of a size and character similar to the Premises. The unanimous written decision of the two (2) arbitrators first chosen (without selection and participation of a third arbitrator), or otherwise the written decision of a majority of three (3) arbitrators chosen as hereinafter provided, shall be conclusive and binding upon Landlord and Tenant. Landlord and Tenant shall each notify the other of its chosen arbitrator within ten (10) days following the call for arbitration and, unless such two (2) arbitrators shall have reached a unanimous decision within thirty (30) days after their designation, they shall select an impartial third arbitrator. Such third arbitrator and the first two (2) chosen shall render their decision within thirty (30) days following the date of appointment of the third arbitrator and shall notify Landlord and Tenant thereof. Judgment may be entered in any court of competent jurisdiction upon an award reflecting the decision of such arbitrators. Landlord and Tenant shall divide equally all expenses of arbitration. Any Leasehold Mortgagee shall have the right to receive notice of any and all arbitration proceedings undertaken pursuant to this Section 16.5, and shall have the right to participate in such arbitration proceedings as an interested party.

16.6 Consents and Approvals. Except as herein otherwise expressly provided, wherever in this Lease the consent or approval of Landlord, Tenant or a Leasehold Mortgagee is required, such consent or approval shall not be unreasonably withheld, delayed or qualified and shall be in writing signed by an authorized representative (designated pursuant to the provisions of Section 16.1) of the party granting such consent or giving such approval. Unless otherwise specifically provided herein, the party requesting consent or approval is entitled to a decision either granting or denying (with reasons for any denial specified) such request within thirty (30) days of the receipt of such request, and if no response is received within such 30-day period, then the requesting party may send a second notice requesting consent or approval, which second notice shall make express reference to this Section 16.6. If there is no response to such second notice, within ten (10) days after delivery of such second notice, then such approval or consent shall be deemed to have been granted.

16.7 Time of Essence. Time is of the essence of this Lease, and the parties hereto shall diligently, promptly and punctually perform the obligations required to be performed by each of them and shall diligently, promptly and punctually attempt to fulfill the conditions applicable to each of them, it being understood that the date by which either party is required to perform any obligation under this Lease shall be determined by taking into account the provisions of Section 11.10, if applicable.

16.8 Due Diligence and Good Faith. Both parties agree to pursue in good faith and with due diligence the purposes set forth herein and all acts in furtherance thereof, specifically including all acts required of either party by the terms hereof.

16.9 Survival of Obligations. All of the obligations, representations, warranties and covenants made in this Lease shall be deemed to have been relied upon by the party to which they were made and to be material and shall survive the execution of this Lease and the expiration or any earlier termination of the Term of this Lease to the extent that they are by their terms, or by a reasonable interpretation of the context, to be performed or observed or relied upon after the execution of this Lease and the expiration or any earlier termination of the Term of this Lease.

16.10 Invalidity of Provisions. If any one or more of the phrases, sentences, clauses or paragraphs contained in this Lease shall be declared invalid by the final and nonappealable order, decree or judgment of any court, this Lease shall be construed as if it did not contain such phrases, sentences, clauses or paragraphs, provided that such construction does not substantially alter the material benefits and burdens of the respective parties as set forth in this Lease.

16.11 Binding Effect. Except as otherwise provided in this Lease, all of the covenants, conditions and obligations contained in this Lease shall be binding upon and inure to the benefit of the respective authorized successors and assigns of Landlord and Tenant to the same extent as if each such successor and assign were in each case named as a party to this Lease. Any Person acquiring any or all of the rights, title and interest of Tenant in and to the leasehold estate in the Premises by virtue of any Leasehold Mortgage Foreclosure shall thereby become liable under and be fully bound by all of the provisions of this Lease (except as otherwise provided in this Lease) and, with the prior written consent of Landlord, Tenant may be fully or partially released from its obligations under this Lease.

16.12 Pronouns. Whenever the context may require, any pronouns used in this Lease shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns shall include the plural and vice versa.

16.13 Rights of Others. Landlord and Tenant acknowledge and agree that each Leasehold Mortgagee is intended to be a third party beneficiary of Article VI and every other provision set forth herein relating to the Leasehold Mortgages and Leasehold Mortgagees and shall be entitled to enforce the same to the fullest extent and in all respects as if such Leasehold Mortgagee were a direct party hereto. Except as expressly set forth herein, nothing in this Lease is intended to confer upon any Person other than the parties hereto and their authorized successors and assigns, any rights or remedies under or by reason of this Lease.

16.14 Amendments. This Lease may not be amended, changed, modified or discharged except by an instrument in writing signed by Landlord and Tenant and, if applicable, consented to by any Leasehold Mortgagee.

16.15 Captions and Headings. The captions and headings throughout this Lease are for convenience and reference only, and they shall in no way be held or deemed to define, modify or add to the meaning, scope or intent of any provisions of this Lease.

16.16 Governing Law. This Lease shall be governed by and interpreted under the laws of the Commonwealth of Massachusetts.

16.17 Limitation of Liability. Tenant shall neither assert nor seek to enforce any claim against Landlord or any of Landlord's agents (including without limitation its property manager), contractors or employees, or the assets of any of the foregoing, for breach of this Lease or otherwise, other than against Landlord's interest in the Premises and in the uncollected rents, issues and profits thereof, and Tenant agrees to look solely to such interest for the satisfaction of any liability of Landlord under this Lease. This Section 16.17 shall not limit any right that Tenant might otherwise have to obtain injunctive relief against Landlord. **Landlord and Tenant specifically agree that in no event shall any officer, director, trustee,**

employee or representative of Landlord or any of Landlord's agents, contractors or employees ever be (a) personally liable for any obligation under this Lease, nor (b) liable for consequential or incidental damages or for lost profits whatsoever in connection with this Lease.

ARTICLE XVII.
NOTICES AND PAYMENTS

17.1 Notices, Demands and Other Installments. Unless otherwise expressly permitted by the terms of this Lease, all notices, demands, submissions, requests, consents, approvals and other instruments required or permitted to be given pursuant to the terms of this Lease shall be in writing and shall be deemed to have been properly given if delivered by hand personally to the addressee (which shall include delivery by commercial courier service or recognized overnight delivery service such as Federal Express) or sent by registered or certified United States mail, postage prepaid, return receipt requested, and

(1) if directed to Landlord addressed to:

MIT 139 Main Street Fee Owner LLC
c/o MIT Cambridge Real Estate LLC
238 Main Street, Suite 200
Cambridge, MA 02142
Attn: President

with copies to:

MIT 139 Main Street Fee Owner LLC
c/o MIT Cambridge Real Estate LLC
238 Main Street, Suite 200
Cambridge, MA 02142
Attn: Director of Real Estate Legal Services

[redacted]

and by email to mitimcore@mitimco.mit.edu

(2) if directed to Tenant addressed to:

MIT 139 Main Street Leasehold LLC
c/o MIT Investment Management Company
238 Main Street, Suite 200
Cambridge, MA 02142
Attn: Steven C. Marsh

with copies to:

MIT 139 Main Street Fee Owner LLC
c/o MIT Cambridge Real Estate LLC
238 Main Street, Suite 200
Cambridge, MA 02142
Attn: Director of Real Estate Legal Services

[redacted]

and by email to mitimcore@mitimco.mit.edu

or to such other address as may from time to time be specified in writing by any party hereto. All notices delivered in accordance with the terms hereof shall be deemed to have been given upon receipt or refusal of delivery, whichever first occurs. Unless otherwise specified in writing, each party shall direct all sums payable to another party to said party's address for notice purposes. Notice sent to an address specified by a party in writing as its notice address shall be effective even if delivery cannot be made.

ARTICLE XVIII.
ABANDONMENT

18.1 Abandonment during Last 20 Years. If, during the last twenty (20) years of the Term, Tenant shall abandon the Premises [redacted]

ARTICLE XIX.
LANDLORD'S RIGHT TO PURCHASE TENANT'S LEASEHOLD

19.1 Purchase Option.

(a) Landlord shall have the right, upon at least six (6) months' written notice to Tenant ("**Landlord's Purchase Notice**"), to purchase (or to designate an affiliate to purchase) all of Tenant's right, title and interest under this Lease ("**Tenant's Interest**") for a purchase price equal to the greater of [redacted] herein referred to as the "**Purchase Price**").

(b) Landlord shall have the right, prior to delivering a Landlord's Purchase Notice, to request from time to time Tenant's good faith determination (as of one or more dates specified in such request) of (i) the Loan Payoff, and (ii) Tenant's Basis. Tenant shall provide reasonably detailed evidence of such determinations to Landlord in writing within forty-five (45) days after request therefor.

(c) Landlord's Purchase Notice shall include (i) the date (the "**Acquisition Date**") on which Landlord's acquisition of Tenant's Interest shall close, which date shall be no less than six (6) months after the date of Landlord's Purchase Notice, and (ii) Landlord's good faith determination of the FMV. Notwithstanding anything to the contrary contained herein, the Acquisition Date shall not occur prior to the date on which any Leasehold Mortgage then in effect may be prepaid or defeased in full (as set forth in the applicable notice(s) delivered to Landlord in accordance with Section 6.1 above).

(d) Within forty-five (45) days after Tenant's receipt of Landlord's Purchase Notice, Tenant shall deliver to Landlord a written notice ("**Tenant's Valuation Notice**") in which shall be included (i) Tenant's good faith determination of the Loan Payoff as of the Acquisition Date, which determination shall be consistent with any determination provided by Tenant pursuant to subsection (b) above within the previous twelve (12) months, (ii) Tenant's good faith determination of Tenant's Basis as of the Acquisition Date, which determination shall be consistent with any determination provided by Tenant pursuant to subsection (b) above within the previous twelve (12) months, it being understood and agreed that Tenant's determination of Tenant's Basis shall be supported by a certification executed by Tenant's certified public accountant as to the calculation thereof, (iii) Tenant's acknowledgement that Tenant agrees with Landlord's determination of the FMV or, if Tenant does not agree with such determination by Landlord, reasonably detailed evidence of Tenant's good faith determination of the FMV, and (iv) Tenant's determination of the Purchase Price in accordance with subsection (a) above. Upon Landlord's request, Tenant shall provide Landlord with all documents and other evidence supporting Tenant's good faith determinations of the Loan Payoff and Tenant's Basis, including, without limitation, a payoff notice or letter from all applicable Leasehold Mortgagees and the certification from Tenant's certified public accountant as to the calculation of Tenant's Basis.

(e) Within thirty (30) days after Landlord's receipt of Tenant's Valuation Notice, Landlord shall have the right, by written notice to Tenant, to rescind the applicable Landlord's Purchase Notice, in which event this Lease shall continue in full force and effect.

(f) If the Purchase Price will be equal to the FMV and Landlord and Tenant are unable to agree on the FMV within thirty (30) days after the date of Tenant's Valuation Notice, then unless Landlord has timely rescinded the applicable Landlord's Purchase Notice, either party may submit the matter to arbitration by giving notice (a "**Dispute Notice**") to the other party. Within ten (10) days after delivery of a Dispute Notice, Tenant and Landlord shall each notify the other, in writing, of their respective selections of an appraiser (respectively, "**Landlord's Appraiser**" and "**Tenant's Appraiser**"). If Landlord's Appraiser and Tenant's Appraiser are able to reach agreement, then such agreement shall be binding on both Landlord and Tenant. If Landlord's Appraiser and Tenant's Appraiser are unable to reach agreement within forty (40) days after the Dispute Notice, Landlord's Appraiser and Tenant's Appraiser shall jointly select a third appraiser (the "**Third Appraiser**"). All of the appraisers selected shall be individuals with at least ten (10) consecutive years' commercial appraisal experience in the area in which the Premises are located, shall be

members of the Appraisal Institute (M.A.I.), and, in the case of the Third Appraiser, shall not have acted in any capacity for either Landlord or Tenant within five (5) years of his or her selection. The three appraisers shall determine the FMV in accordance with the requirements and criteria set forth in subsection (a) above, employing the method commonly known as Baseball Arbitration, whereby Landlord's Appraiser and Tenant's Appraiser each sets forth reasonably detailed evidence supporting its determination of the FMV, and the Third Appraiser must select one or the other (it being understood that the Third Appraiser shall be expressly prohibited from selecting a compromise figure). Landlord's Appraiser and Tenant's Appraiser shall deliver their determinations of the FMV to the Third Appraiser within fifteen (15) days of the appointment of the Third Appraiser and the Third Appraiser shall render his or her decision within thirty (30) days after receipt of both of the other two determinations. The Third Appraiser's decision shall be binding on both Landlord and Tenant. Each party shall bear the cost of its own appraiser and the cost of the Third Appraiser shall be borne by the party whose determination is not selected. Within thirty (30) days after determination of the FMV in accordance with this Section 19.1(f), Landlord shall have the right, by written notice to Tenant, to rescind the applicable Landlord's Purchase Notice, in which event this Lease shall continue in full force and effect and Landlord shall reimburse Tenant for all of Tenant's reasonable out of pocket costs and expenses incurred in connection with the appraisal process described in this subsection (f).

(g) Between the date on which Tenant receives Landlord's Purchase Notice and the Acquisition Date, unless Landlord rescinds the applicable Landlord's Purchase Notice in accordance with the terms of this Section 19.1, Tenant shall not (i) refinance any Leasehold Mortgage then in effect unless (A) the term thereof shall expire during such period, or (B) Tenant shall have entered into a binding agreement to do so prior to receipt of Landlord's Purchase Notice; nor (ii) make any capital repairs or replacements to the Premises which would result in an increase to the Purchase Price unless (A) required to be made prior to the Acquisition Date by Space Leases then in effect or by Legal Requirements, or (B) reasonably necessary to maintain safety and avoid injury or damage to persons or property. Tenant shall provide Landlord with prior written notice of any such refinancing and/or capital repairs or replacements made pursuant to this subsection (g) (except with respect to capital repairs and replacements made in an emergency, in which event notice shall be given promptly after the making of such capital repairs or replacements).

(h) At least sixty (60) days and no more than ninety (90) days prior to the Acquisition Date, Tenant shall provide Landlord with a written list of all service contracts in effect with respect to the Premises, which list shall be accompanied by copies of all such service contracts. At least thirty (30) days prior to the Acquisition Date, Landlord shall notify Tenant whether Landlord elects to assume any of such contracts, to the extent assignable.

19.2 Termination Fee. If Landlord elects to purchase Tenant's Interest pursuant to Section19.1, [redacted] it being understood that Tenant's actual damages may be difficult to ascertain.

19.3 Closing.

(a) On the Acquisition Date, Landlord shall:

(i) execute and deliver to Tenant (A) either (1) a notice of termination of this Lease in recordable form and otherwise reasonably acceptable to Landlord and Tenant (the "**Notice of Termination**") (it being acknowledged and agreed that Landlord shall have the right to record and/or file with the Middlesex South Registry of Deeds and/or the Middlesex South Registry

District of the Land Court, as appropriate, a fully executed original of the Notice of Termination), if Landlord elects not to keep this Lease in full force and effect after the Acquisition Date, or (2) an assignment and assumption of leases with respect to all Space Leases, in form reasonably approved by the parties hereto (the "**Lease Assignment**"), if Landlord elects to keep this Lease in full force and effect after the Acquisition Date, (B) an assignment and assumption agreement in form and substance reasonably approved by the parties hereto with respect to any service contracts Landlord elects to assume, to the extent assignable (the "**Contract Assignment**"), if any, (C) a settlement statement setting forth the Purchase Price, the [redacted] any security deposit(s) paid under any Space Leases (hereinafter defined) and appropriate adjustments for the income and expenses of the Premises (including, without limitation, Taxes and rents paid pursuant to Space Leases) and other items customarily apportioned on the date of a real estate acquisition in the Commonwealth of Massachusetts and otherwise in form and substance reasonably approved by the parties hereto (the "**Settlement Statement**"), (D) Landlord's Statement (hereinafter defined), (E) an Assignment and Assumption of Intangibles in form reasonably acceptable to Landlord and Tenant (the "**Assignment**") with respect to Tenant's right, title and interest, if any, in, to and under (1) all occupancy certificates or permits or their local equivalent issued in the name of Tenant relating to, or used by Tenant in connection with the operation and maintenance of, the Premises, (2) all plans and specifications and governmental approvals that exist as of the Acquisition Date and relate exclusively to the operation and maintenance of the Premises, and (3) all warranties and guaranties relating to the Premises, to the extent the same are assignable and in force and effect (the "**Warranties**"), and (F) such other documents and instruments as may reasonably be required to consummate the transaction contemplated hereby and otherwise to effect the agreements of the parties hereto, provided in all events the same are consistent with this Section 19 and are customarily provided by purchasers of property interests similar to Tenant's Interest and located in the county in which the Premises are located (all of the foregoing documents, "**Landlord's Closing Documents**"); and

(ii) pay to Tenant the amount reflected on the Settlement Statement as being due from Landlord.

(b) On the Acquisition Date, Tenant shall:

(i) execute and deliver to Landlord (A) the Notice of Termination or Lease Assignment, as applicable, (B) the Contract Assignment, if applicable, (C) Settlement Statement, (D) the Assignment, (E) an affidavit, duly executed by Tenant, to the effect that Tenant is a citizen or resident of the United States and specifying its taxpayer identification number, (F) such affidavits as Landlord's title company may require in order to issue, without extra charge, policies of title insurance free of any exceptions for unfiled mechanic's or materialmen's liens or parties in possession, and such reasonable affidavits for so-called "gap" coverage, (G) such other documents and instruments as may reasonably be required to consummate the transaction contemplated hereby and otherwise to effect the agreements of the parties hereto, provided in all events the same are consistent with this Section 19 and are customarily provided by sellers of property interests similar to Tenant's Interest and located in the county in which the Premises are located, (H) the bill of sale contemplated by Section 5.6, and (I) Tenant's Statement (hereinafter defined) (all of the foregoing are collectively referred to as "**Tenant's Closing Documents**");

(ii) deliver to Landlord (A) reasonable evidence of the termination of all property and asset management agreements, brokerage agreements and service contracts not assumed by Landlord, (B) all keys for the Improvements, including without limitation keys for maintenance shops, storage rooms and maintenance equipment, with identification of the lock to which each such key relates, and (C) the Property Information (hereinafter defined); provided,

however, the Property Information shall not be a closing delivery, but, instead, shall be left at the Premises for Landlord and, upon Closing, shall become the property of Landlord, provided that the purchaser has the right, at its expense, to retain copies of any or all of the Property Information; and

(iii) cause to be recorded and/or filed, as appropriate, releases, terminations and/or discharges of all (A) Leasehold Mortgages, and (B) all other covenants, restrictions, reservations, liens, conditions, easements and other encumbrances affecting the Premises other than (1) as may have been expressly consented to by Landlord in writing; or (2) which are of record as of the Commencement Date.

(c) For purposes hereof, the "**Property Information**" shall mean all leases, licenses and use agreements for space at the Premises ("**Space Leases**") then in effect, real estate tax bills for the previous three (3) fiscal years, all Warranties and all other documents, files, materials, data, drawings, plans and information relating to the operation, leasing, then-current maintenance and management of the Premises, including without limitation, property maintenance and operating contracts, engineering reports, inspection reports, environmental reports, building plans and building permits.

(d) For purposes hereof, the "**Landlord's Statement**" shall mean a certification by Landlord for the benefit of Tenant that the following representations are true as of the Acquisition Date (or identifying any of the following representations which are not true and correct and explaining the state of facts giving rise to the same; it being understood that the failure of any of the following representations to be true shall entitle Tenant to either (1) postpone the closing by one or more notices to Landlord for up to ninety (90) days in the aggregate, during which period Landlord shall use good faith diligent efforts to make such representation true, or (2) nullify Landlord's Purchase Notice, or (3) waive such failure and proceed to close on the sale of Tenant's Interest): (a) the execution, delivery and performance of Landlord's obligations under this Section 19 have been duly authorized by all necessary action on the part of Landlord and do not require the consent of any third party not already obtained and that the individual executing Landlord's Closing Documents on behalf of Landlord has the authority to bind Landlord to the terms of thereof; (b) all documents that are to be executed by Landlord on the Acquisition Date have been duly authorized by all necessary action on the part of Landlord; (c) all such documents are legal, valid and binding obligations of Landlord, enforceable in accordance with their terms except as such enforceability may be limited by (i) applicable bankruptcy, insolvency, receivership, reorganization, fraudulent conveyance, moratorium, and other similar statutory or decisional laws, enacted or in effect at any time, pertaining to the relief of debtors or affecting the rights and remedies of creditors or secured parties generally, (ii) the application by courts of competent jurisdiction of policies or laws determined to have a paramount public interest; (iii) determinations as to specific provisions contained in such documents being unenforceable by reason of the same being contrary to generally applicable principles of public policy; (iv) the exercise of judicial or administrative discretion; or (v) general principles of equity; (d) Landlord is duly organized and in good standing under the laws of its state of organization and has the power and authority to enter into and perform its obligations under this Section 19 and Landlord's Closing Documents.; (e) neither the execution and delivery of Landlord's Closing Documents by Landlord nor the consummation of the transactions contemplated hereby conflict with, or constitute a violation or breach by Landlord of, any provision of Landlord's organizational documents or any contract or judicial or administrative order to which Landlord is a party or by which Landlord is bound; (f) Landlord has not filed any petition seeking or acquiescing in any reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any law relating to bankruptcy or insolvency, nor has any such petition been filed against Landlord; and (g) Landlord is not insolvent and the consummation of the transactions contemplated by this Section 19 shall not render Landlord insolvent.

(e) For purposes hereof, the "**Tenant's Statement**" shall mean a certification by Tenant for the benefit of Landlord that the following representations are true as of the Acquisition Date (or identifying any of the following representations which is not true and correct and explaining the state of facts giving rise to the same; it being understood that the failure of any of the following representations to be true shall entitle Landlord to either (1) postpone the closing by one or more notices to Tenant for up to ninety (90) days in the aggregate, during which period Tenant shall use good faith diligent efforts to make such representation true, or (2) rescind Landlord's Purchase Notice, or (3) waive such failure and proceed to close on the acquisition of Tenant's Interest): (a) the execution, delivery and performance of Tenant's obligations under this Section 19 have been duly authorized by all necessary action on the part of Tenant and do not require the consent of any third party not already obtained and that the individual executing Tenant's Closing Documents on behalf of Tenant has the authority to bind Tenant to the terms of thereof; (b) all documents that are to be executed by Tenant on the Acquisition Date have been duly authorized by all necessary action on the part of Tenant; (c) all such documents are legal, valid and binding obligations of Tenant, enforceable in accordance with their terms except as such enforceability may be limited by (i) applicable bankruptcy, insolvency, receivership, reorganization, fraudulent conveyance, moratorium, and other similar statutory or decisional laws, enacted or in effect at any time, pertaining to the relief of debtors or affecting the rights and remedies of creditors or secured parties generally, (ii) the application by courts of competent jurisdiction of policies or laws determined to have a paramount public interest; (iii) determinations as to specific provisions contained in such documents being unenforceable by reason of the same being contrary to generally applicable principles of public policy; (iv) the exercise of judicial or administrative discretion; or (v) general principles of equity; (d) Tenant is duly organized and in good standing under the laws of its state of organization and has the power and authority to enter into and perform its obligations under this Section 19 and Tenant's Closing Documents; (e) neither the execution and delivery of Tenant's Closing Documents by Tenant nor the consummation of the transactions contemplated hereby conflict with, or constitute a violation or breach by Tenant of, any provision of Tenant's organizational documents or any contract or judicial or administrative order to which Tenant is a party or by which Tenant is bound; (f) Tenant has not filed any petition seeking or acquiescing in any reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any law relating to bankruptcy or insolvency, nor has any such petition been filed against Tenant; (g) Tenant is not insolvent and the consummation of the transactions contemplated by this Section 19 shall not render Tenant insolvent; (h) Tenant is in compliance with the requirements of Executive Order No. 133224, 66 Fed Reg. 49079 (September 25, 2001) (the "**Order**") and other similar requirements contained in the rules and regulations of the Office of Foreign Asset Control, Department of the Treasury ("**OFAC**") and in any enabling legislation or other Executive Orders in respect thereof (the Order and such other rules, regulations, legislation, or orders are collectively called the "**Orders**"); (i) Tenant (A) is not listed on the Specially Designated Nationals and Blocked Persons List maintained by OFAC pursuant to the Order and/or on any other list of terrorists or terrorist organizations maintained pursuant to any of the rules and regulations of OFAC or pursuant to any other applicable Orders (such lists are collectively referred to as the "**Lists**"), (B) has not been determined by competent authority to be subject to the prohibitions contained in the Orders, and (C) is not owned or controlled by, nor acts for or on behalf of, any person or entity on the Lists or any other person or entity who has been determined by competent authority to be subject to the prohibitions contained in the Orders; (j) Tenant has not received written notice of, and to Tenant's knowledge, there are not any, (A) actions, suits or proceedings (including arbitration proceedings) currently pending against Tenant, or relating to violations of law (including without limitation laws relating to the

environmental condition of the Premises) not fully remedied, or (B) condemnation actions against the Premises or any portion thereof; (k) the only Space Leases affecting the Premises are as listed, and (1) the only property management agreements, asset management agreements, brokerage agreements and service contracts in effect on the Acquisition Date are as listed.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have caused this Lease to be executed as a sealed instrument by their respective duly authorized agents, as of the date and year first set forth above.

LANDLORD:

MIT 139 MAIN STREET FEE OWNER LLC

By: MIT Cambridge Real Estate LLC, its manager

By: /s/ Seth D. Alexander
Seth D. Alexander, President, and not individually
Hereunto Duly Authorized

TENANT:

MIT 139 MAIN STREET FEE LEASEHOLD LLC

By: MIT Cambridge Real Estate LLC, its manager

By: /s/ Seth D. Alexander
Seth D. Alexander, President, and not individually
Hereunto Duly Authorized

EXHIBIT A

LEGAL DESCRIPTION OF LAND

A certain parcel of land situated and now numbered 137 to 145 Main Street in Cambridge, Middlesex County, Massachusetts, being the premises shown as Lot A on a plan entitled “Plan of Premises in Cambridge, Massachusetts, W.A. Mason & Son Co., Surveyors, September 13, 1926, Changes October 30, 1926”, recorded in Plan Book 385, Plan 49, said premises being bounded and described according to said plan as follows:

SOUTHERLY	on the Northerly side of said Main Street, ninety (90) feet;
WESTERLY	on land now or formerly of W.R. Mason et al, one hundred four and 07/100 (104.07) feet;
NORTHERLY	by Lot B as shown on said plan, ninety and 01/100 (90.01) feet; and
EASTERLY	on land now or formerly of heirs of Mrs. Brooks, one hundred five and 66/100 (105.66) feet.

EXHIBIT B

BASE RENT SCHEDULE

[redacted]

EXHIBIT C

LIST OF ENVIRONMENTAL REPORTS

[redacted]

EXHIBIT 21.1

SUBSIDIARIES OF STOKE THERAPEUTICS, INC.

Name of Subsidiary	Jurisdiction
The Massachusetts Securities Corp	Delaware