Stoke Therapeutics Presents Two-Year Natural History Data from Patients with Autosomal Dominant Optic Atrophy (ADOA)

October 20, 2025

– Data provide insights that informed the Phase 1 study of STK-002 as a potential disease-modifying medicine for ADOA, including disease etiology, progression and clinical assessments –

– ADOA is a rare genetic disease primarily caused by variants in the OPA1 gene that result in progressive and irreversible vision loss –

BEDFORD, Mass.--(BUSINESS WIRE)--Oct. 20, 2025-- Stoke Therapeutics, Inc. (Nasdaq: STOK), a biotechnology company dedicated to restoring protein expression by harnessing the body's potential with RNA medicines, today announced the presentation of two-year data from the FALCON study, a prospective natural history study in people with Autosomal Dominant Optic Atrophy (ADOA) (n=47). Results were presented at the 2025 American Academy of Ophthalmology (AAO) Annual Meeting and provide important insights into ADOA, a rare, progressive disease for which there are no approved treatments. The data have informed the company's clinical development program for the proprietary antisense oligonucleotide (ASO) STK-002, currently being evaluated in the Phase 1 OSPREY study.

A summary of findings from the FALCON study includes:

- While OPA1-associated ADOA progresses slowly, 24% of patients experienced at least a five-letter loss in low-contrast visual acuity (LCVA). LCVA detects more subtle changes in optic nerve function, often before standard vision tests show a difference, making it a sensitive measure of disease progression.
- Higher levels of mitochondrial dysfunction were shown in people with ADOA compared with healthy individuals. Mitochondrial function is crucial for vision because mitochondria produce most of the energy required by the cells that make up the optic nerve.
- No significant anatomic changes in the retina were observed, suggesting that retinal dysfunction may be reversible with treatment intervention.

"These findings suggest that impaired function in the retina and the optic nerve occurs before permanent cell loss. By increasing the level of naturally occurring OPA1 protein to improve mitochondrial function, it may be possible to stabilize and even restore vision in people with ADOA," said Dr. Patrick Yu-Wai-Man, M.D., Ph.D., Professor of Ophthalmology and Honorary Consultant Neuro-ophthalmologist at the University of Cambridge, Moorfields Eye Hospital, and the UCL Institute of Ophthalmology, United Kingdom, and the primary investigator on the Phase 1 OSPREY study. "Importantly, the FALCON study has identified promising measures of disease progression in ADOA, which can be applied to both natural history and interventional studies of potential new treatments."

"The FALCON study is the largest prospective natural history study to evaluate the effects of ADOA, a rare genetic disease that leads to progressive vision loss and, for many patients, results in blindness," said Barry Ticho, M.D., Ph.D., Chief Medical Officer of Stoke Therapeutics. "These data will provide important context as we initiate our Phase 1 study of STK-002 as the first potential disease-modifying medicine for ADOA."

Presentation Details
Title: FALCON Natural History Study: Longitudinal Assessment of Functional and Anatomical Changes in OPA1 Autosomal Dominant Optic Atrophy
Presenter: Dr. Patrick Yu-Wai-Man, M.D., Ph.D., Professor of Ophthalmology and Honorary Consultant Neuro-ophthalmologist at the University of Cambridge, Moorfields Eye Hospital, and the UCL Institute of Ophthalmology, United Kingdom
Session: Podium Poster, PT01
Date and Time: Saturday, October 18th, 9:15-10:15 AM ET
Location: Poster Theater, Hall WB4, Orange County Convention Center, Orlando, FL

About the FALCON Study

FALCON was a multicenter, 24-month, prospective natural history study of people ages 8 to 60 who are living with ADOA. FALCON aimed to provide a better understanding of how ADOA disease parameters change over time to inform potential future interventional clinical trials and was designed to evaluate the rate of change in structural and functional ophthalmic assessments. No investigational medications or other treatments were provided. The study enrolled 47 patients across 10 sites in the United States, United Kingdom, Italy and Denmark. All participants had a confirmed diagnosis of ADOA caused by an *OPA1* variant. Patients underwent assessments at baseline, 6 months, 12 months, 18 months and 24 months. Data from the FALCON study support the clinical development of STK-002, Stoke's proprietary antisense oligonucleotide (ASO) currently being evaluated in the Phase 1 OSPREY study.

About Autosomal Dominant Optic Atrophy (ADOA)

ADOA is the most common inherited optic nerve disorder. It is a rare disease that causes progressive and irreversible vision loss in both eyes starting in the first decade of life. Severity can vary and the rate of vision loss can be difficult to predict. Roughly half of people with ADOA fail driving standards and up to 46% are registered as legally blind. More than 400 different *OPA1* variants have been reported in people diagnosed with ADOA. ADOA affects approximately one in 30,000 people globally with a higher incidence in Denmark of one in 10,000 due to a founder effect. Currently there is no approved treatment for people living with ADOA.

About STK-002

STK-002 is a proprietary antisense oligonucleotide (ASO) in clinical development for the treatment of ADOA. Stoke believes that STK-002 has the potential to be the first disease-modifying therapy for people living with ADOA. An estimated 65% to 90% of cases are caused by variants in the *OPA1* gene, most of which lead to a haploinsufficiency resulting in 50% OPA1 protein expression and disease manifestation. STK-002 is designed to upregulate OPA1 protein expression by leveraging the non-mutant (wild-type) copy of the *OPA1* gene to restore OPA1 protein expression with the aim to maintain or improve vision in patients with ADOA. Stoke has generated preclinical data demonstrating proof-of-mechanism and proof-of-concept for STK-002. STK-002 has been granted orphan drug designation by the FDA as a potential new treatment for ADOA. A Phase 1 study (OSPREY) of STK-002 in people with ADOA is now underway.

About Stoke Therapeutics

Stoke Therapeutics (Nasdaq: STOK), is a biotechnology company dedicated to restoring protein expression by harnessing the body's potential with RNA medicine. Using Stoke's proprietary TANGO (Targeted Augmentation of Nuclear Gene Output) approach, Stoke is developing antisense oligonucleotides (ASOs) to selectively restore naturally occurring protein levels. Stoke's first medicine in development, zorevunersen, has demonstrated the potential for disease modification in patients with Dravet syndrome and is currently being evaluated in a Phase 3 study. Stoke's initial focus are diseases of the central nervous system and the eye that are caused by a loss of ~50% of normal protein levels (haploinsufficiency). Proof of concept has been demonstrated in other organs, tissues, and systems, supporting broad potential for Stoke's proprietary approach. Stoke is headquartered in Bedford, Massachusetts. For more information, visit https://www.stoketherapeutics.com/.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, including, but not limited to: the ability of STK-002 to treat the underlying cause of ADOA and maintain or improve vision; Stoke's ability to use data from the FALCON study to support development of STK-002; and the timing and expected progress of clinical trials for STK-002. Statements including words such as "anticipate," "could," "expect," "plan," "will," or "may" and statements in the future tense are forward-looking statements. These forward-looking statements involve risks and uncertainties, as well as assumptions, which, if they prove incorrect or do not fully materialize, could cause Stoke's results to differ materially from those expressed or implied by such forward-looking statements, including, but not limited to, risks and uncertainties related to: Stoke's ability to advance, obtain regulatory approval and ultimately commercialize its product candidates; that if Stoke's collaborators were to breach or terminate their agreements, it would not obtain the anticipated financial or other benefits; the possibility that Stoke and its collaborators may not be successful in their development of product candidates and that, even if successful, they may be unable to successfully commercialize such product candidates; positive results in a clinical trial may not be replicated in subsequent trials or successes in early stage clinical trials may not be predictive of results in later stage trials; Stoke's ability to protect its intellectual property; Stoke's ability to fund development activities and achieve development goals to mid-2028; and the other risks and uncertainties described under the heading "Risk Factors" in Stoke's Annual Report on Form 10-K for the year ended December 31, 2024, its quarterly reports on Form 10-Q, and the other documents it files with the Securities and Exchange Commission. These forward-looking statements speak only as of the date of this press release, and Stoke undertakes no obligation to revise or update any forward-looking statements to reflect events or circumstances after the date hereof.

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Media & Investor Contacts:
Dawn Kalmar
Chief Communications Officer
dkalmar@stoketherapeutics.com
781-303-8302

Doug Snow
Director, Communications & Investor Relations
IR@stoketherapeutics.com
508-642-6485

Source: Stoke Therapeutics, Inc.