Neurogene Announces Evidence-Based Monitoring and Treatment Intended to Reverse Rare Hyperinflammatory Syndrome Associated with High-Dose AAV

May 16, 2025

Oral presentation at ASGCT Annual Meeting to describe algorithm to monitor, detect and treat HLH, which can be adopted for AAV gene therapy

NEW YORK--(BUSINESS WIRE)--May 16, 2025-- Neurogene Inc. (Nasdaq: NGNE), a clinical-stage company founded to bring life-changing genetic medicines to patients and families affected by rare neurological diseases, today announced an oral presentation at the American Society of Gene and Cell Therapy (ASGCT) Annual Meeting describing a monitoring and treatment algorithm intended to reverse the rare, severe hyperinflammatory syndrome hemophagocytic lymphohistiocytosis (HLH) that has been associated with systemic exposure to high doses of adeno-associated virus (AAV) gene therapy (>1E14 vg/kg).

The 1E15 vg dose level Neurogene is moving forward in its Phase 1/2 trial of NGN-401 gene therapy for Rett syndrome translates into the E13 vg/kg range, and the Company is not aware of any case of HLH ever being reported at this dose level in AAV gene therapy.

“We appreciate the opportunity that ASGCT is providing for us to share findings related to HLH and the evidence-based recommendations for how to monitor, detect and treat this rare, hyperinflammatory syndrome in the context of AAV gene therapy,” said Rachel McMinn, Ph.D., Founder and Chief Executive Officer of Neurogene. “As we connect with the gene therapy community to provide this information, our hope is that it spurs adoption of the early monitoring and treatment algorithm and increases propensity for sharing trial findings from which others can learn.”

Early monitoring and prompt treatment have proven effective in reversing the course of HLH in the setting of higher-dose AAV gene therapy (>1E14 vg/kg)[1,2]. Neurogene incorporated the following monitoring and treatment protocol into its Phase 1/2 clinical trial of NGN-401 for Rett syndrome despite the use of a lower dose in the E13 vg/kg range:

- Implemented daily monitoring for the following in the first week post-dosing: elevated ferritin levels, fever, and falling blood counts (cytopenia), also referred to as the three Fs[3]; over 90% of patients with HLH presented with these three initial signs seen in the HLH-2004 study[4] on which current HLH treatment guidelines are based
- Included HLH treatment algorithm in the trial, which includes high-dose corticosteroids as first-line treatment, and anakinra, the IL-1 receptor agonist, as second-line treatment

[1] Galletta et al. J Clin Pharm Ther. 2022;47(9):1478-1481.
[2] Byrne et al. Mol Ther. 2022;30(12):3503-3504.
[3] Cox et al. Lancet Rheumatol. 2024;6:e51–62.
[4] Bergsten et al. Blood. 2017;30(25)2728-2738.

About Neurogene
The mission of Neurogene is to treat devastating neurological diseases to improve the lives of patients and families impacted by these rare diseases. Neurogene is developing novel approaches and treatments to address the limitations of conventional gene therapy in central nervous system disorders. This includes selecting a delivery approach to maximize distribution to target tissues and designing products to maximize potency and purity for an optimized efficacy and safety profile. The Company’s novel and proprietary EXACT™ transgene regulation platform technology allows for the delivery of therapeutic levels while limiting transgene toxicity associated with conventional gene therapy. Neurogene has constructed a state-of-the-art gene therapy manufacturing facility in Houston, Texas. CGMP production of NGN-401 was conducted in this facility and will support pivotal clinical development activities. For more information, visit www.neurogene.com.

Cautionary Note Regarding Forward-Looking Statements
Statements in this press release which are not historical in nature are intended to be, and hereby are identified as, forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements may discuss goals, intentions and expectations as to future plans, trends, events, results of operations or financial condition, or otherwise, based on current expectations and beliefs of the management of Neurogene, as well as assumptions made by, and information currently available to, management of Neurogene, including, but not limited to, statements regarding: the safety, tolerability and efficacy of NGN-401; the effectiveness of the monitoring and treatment protocol for HLH in Neurogene’s Phase 1/2 clinical trial of NGN-401; and the ability to reverse cases of AAV-related HLH when following this protocol. Forward-looking statements generally

include statements that are predictive in nature and depend upon or refer to future events or conditions, and include words such as “may,” “will,” “should,” “would,” “expect,” “anticipate,” “plan,” “likely,” “believe,” “estimate,” “project,” “intend,” “on track,” and other similar expressions or the negative or plural of these words, or other similar expressions that are predictions or indicate future events or prospects, although not all forward-looking statements contain these words. Forward-looking statements are based on current beliefs and assumptions that are subject to risks, uncertainties and assumptions that are difficult to predict with regard to timing, extent, likelihood, and degree of occurrence, which could cause actual results to differ materially from anticipated results and many of which are outside of Neurogene’s control. Such risks, uncertainties and assumptions include, among other things, the risks and uncertainties identified under the heading "Risk Factors" included in Neurogene’s Annual Report on Form 10-K for the year ended December 31, 2024, filed with the Securities and Exchange Commission (SEC) on March 24, 2025, Neurogene’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2025, filed with the SEC on May 9, 2025, and other filings that the Company has made and may make with the SEC in the future. Nothing in this communication should be regarded as a representation by any person that the forward-looking statements set forth herein will be achieved or that the contemplated results of any such forward-looking statements will be achieved. Forward-looking statements in this communication speak only as of the day they are made and are qualified in their entirety by reference to the cautionary statements herein. Except as required by applicable law, Neurogene undertakes no obligation to revise or update any forward-looking statement, or to make any other forward-looking statements, whether as a result of new information, future events or otherwise.

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