Neurogene Announces Presentation of Preclinical Data for Gene Therapies to Treat AGU and CMT4J, Two Rare and Devastating Neurodegenerative Disorders

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Researchers present "proof of concept" data in mice at the WORLDSymposium™ 2019

NEW YORK, February 7, 2019 – Neurogene, Inc., a company with a mission to bring life-changing medicines to patients and families affected by rare neurological diseases, today announced that researchers presented preliminary, unpublished "proof of concept" data in mice evaluating the safety and efficacy of adeno-associated virus (AAV) gene therapy for AGU and CMT4J, two rare neurological diseases, at the 15th Annual WORLD*Symposium*™ conference in Orlando, Florida.

The potential therapies are being investigated under a collaboration agreement between Neurogene and UT Southwestern Medical Center through multiple sponsored agreements. Neurogene provides financial support for these and other related research projects, including pre-clinical studies for AGU and CMT4J.

AAV gene therapy is being investigated as a potential treatment for aspartylglucosaminuria (AGU), a neurodegenerative disease caused by dysfunction of the AGA gene. The unpublished data, which have not been peer reviewed, consider the safety and efficacy of gene therapy for these diseases in mice in support of potential future clinical trials. Xin Chen, Ph.D., Instructor of Pediatrics at UT Southwestern Medical Center, presented data evaluating the effects in mice lacking a functional AGA gene, using intravenous or intrathecal administration with low and high doses, and data were reported for early symptomatic mice. Dr. Chen's team reported data indicating AGU gene therapy resulted in dose-dependent, complete or near-complete elimination of toxic substrate in central and peripheral tissues and body fluids and that treatment was well-tolerated at supraphysiological levels.

Cathleen "Cat" Lutz, Ph.D., MBA, from the independent, nonprofit biomedical research institution The Jackson Laboratory (JAX), assessed the efficacy and safety profile of an AAV gene therapy product for the treatment of Charcot-Marie-Tooth disease, type 4J (CMT4J) syndrome, a debilitating peripheral neuropathy caused by dysfunction of the FIG4 gene. CMT4J gene therapy resulted in a dose-dependent, significant improvement in survival, gross motor function, nerve conduction velocity, and histopathology, with optimal outcomes in mice dosed with a maximally feasible dose and at younger ages before significant cellular damage had occurred. There were no observable unexpected adverse effects reported from overexpressing FIG4 in knockout or wildtype mice.

"Results thus far for the AGU and CMT4J gene therapy programs provide encouraging proof of principle data to support future first-in-human clinical trials," stated Rachel McMinn, Ph.D., President and CEO of Neurogene. "We are working closely with our collaborators to advance these programs as expeditiously as feasible to help families suffering from these diseases and further our commitment to advance a pipeline of genetic medicines to treat the underlying cause of serious neurological disorders."

About AGU

AGU is a rare neurodegenerative lysosomal storage disease caused by a deficiency of the aspartylglucosaminidase (AGA) enzyme, which leads to toxic accumulation of N-acetylglucosamines that ultimately cause cellular dysfunction. AGU is characterized in childhood by developmental delay, high rates of inner ear infections, hepatosplenomegaly, gastrointestinal disturbance, ventral wall hernia and gate disturbance. With disease progression, patients experience psychomotor regression, worsening gait disturbance, behavioral and emotional issues, worsening intellectual disability, coarsened facial features, and an increasing risk of seizure. People with AGU have a shortened life span. Unfortunately, AGU can go undiagnosed or misdiagnosed as autism or ADHD, unless a specific genetic, blood or urine based test is performed.

About CMT4J

Charcot-Marie-Tooth diseases are the most common inherited motor and sensory neuropathies, composed of a group of pathologically and genetically distinct subtypes ranging from slowly to rapidly progressive disease. CMT4J is a rare form of CMT caused by mutations in the *FIG4* gene, which leads to uneven loss of myelin of sensory and motor nerve axons. Individuals with CMT4J typically develop symptoms in early to late childhood, presenting with leg weakness, muscle atrophy and clumsiness, and early onset disease is associated with a rapidly progressive course, ultimately leading to loss of ambulation, quadriplegia, respiratory compromise and premature death. Later onset disease has a more variable course that can lead to transient muscle weakness for some patients, while others develop a rapidly progressive form of the disease that is reminiscent of amyotrophic lateral sclerosis. CMT4J may be misdiagnosed as chronic inflammatory demyelinating polyneuropathy, Guillain-Barre Syndrome, or other neuromuscular disorders.

About Neurogene, Inc.

Neurogene was founded to bring life-changing medicines to patients and families affected by rare neurological disorders. We partner with leading academic researchers, patient advocacy organizations and caregivers to bring therapies to patients that address the underlying genetic cause of a broad spectrum of neurological diseases where no effective treatment options exist today. Our lead programs use AAV-based gene therapy technology to deliver a normal gene to patients with a dysfunctional gene. Neurogene is also investing in novel technologies to develop treatments for diseases not well served by gene therapy. For more information, visit neurogenestg.wpengine.com.

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