AGTC Presents Data Demonstrating Efficiency of its AAV Vectors for Ocular Gene Therapy Even in the Presence of Anti-AAV Antibodies

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-Data support safety and potential clinical utility of AGTC's ocular gene therapy candidates regardless of patients' AAV antibody status-

GAINESVILLE, Fla., and CAMBRIDGE, Mass., Oct. 21, 2019 (GLOBE NEWSWIRE) -- Applied Genetic Technologies Corporation (Nasdaq: AGTC), a biotechnology company conducting human clinical trials of adeno-associated virus (AAV)-based gene therapies for the treatment of rare diseases, today reported new data from non-clinical studies evaluating the effect of pre-existing anti-AAV antibodies on the transduction and expression efficiency of AAV vectors. Results show that the presence of neutralizing antibodies (NAbs) to AAV in the serum or in the eye did not affect gene delivery, gene expression, or inflammation following ocular administration of AAV vectors. The data will be presented in a poster at the European Society of Gene and Cell Therapy (ESGCT) taking place in Barcelona, October 22 – 25.

"Preexisting immunity to AAV remains a challenge for many AAV gene therapies due to the high prevalence of AAV in the general population," said Mark Shearman, Ph.D., Chief Scientific Officer of AGTC and lead author on the poster. "While the eye has partial immune privilege and appears less affected by NAbs, fully understanding the degree of vector neutralization that occurs following ocular administration of AAV-based gene therapies is important for the approval of our clinical-stage product candidates and for their safe and effective use in patients. The data to be presented support the safety and efficiency of our AAV vectors independent of Nab levels, which should allow use of these vectors in larger patient populations."

Non-human primates with low, intermediate, or high levels of systemic NAbs against AAV-TYF (the vector used in AGTC's current clinical development programs) received intravitreal injections of an AAV vector carrying a fluorescent marker gene into their right eyes. The treated and untreated eyes were evaluated at multiple time points over the 12-week study. Vitreous humor samples were collected from treated eyes and aqueous humor samples were collected from both eyes at week 12. NAb titers were measured for all collected samples. Key findings include the following:

- The presence of preexisting anti-AAV antibodies did not result in increased inflammation and did not correlate to inflammation in the dosed eye.
- Very high serum anti-AAV Nab titers were not sufficient to block or impact efficiency of AAV transduction in the retina. This indicates that systemic anti-AAV Nab titers are not the sole predictor of transduction efficiency after AAV dosing to the eye.
- There was good correlation between increases in anti-AAV Nabs in the serum and the treated eye following ocular administration of an AAV vector.
- Ocular anti-AAV NAb levels in the aqueous and vitreous humor were similar to each other, demonstrating that aqueous humor sampling can be used to represent ocular anti-AAV NAb levels.
- Levels of anti-AAV NAbs in serum and the eye and expression of the marker gene in the retina did not appear to be impacted by the presence of preexisting anti-AAV NAbs.

"AGTC's commitment to addressing unmet patient needs requires that we fully evaluate and provide robust data that allow patients and physicians to make data-based treatment decisions," said Sue Washer, President and CEO of AGTC. "As we advance our Phase 1/2 clinical programs in X-linked retinitis pigmentosa and achromatopsia due to mutations in the ACHM A3 or B3 genes, we are conducting parallel non-clinical studies designed to enable the most complete data set possible in support of our future Biologics License Applications. We believe these studies will be essential for regulatory success and for the safe and effective clinical use of our potential products."

About AGTC
AGTC is a clinical-stage biotechnology company that uses a proprietary gene therapy platform to develop transformational genetic therapies for patients suffering from rare and debilitating diseases. Its initial focus is in the field of ophthalmology, in which it has active clinical trials in X-linked retinitis pigmentosa (XLRP) and achromatopsia (ACHM CNGB3 & ACHM CNGA3). In addition to its clinical trials, AGTC has preclinical programs in optogenetics; adrenoleukodystrophy (ALD), which is a disease of the central nervous system (CNS), and other CNS, ophthalmology, and otology indications. The optogenetics program is being developed in collaboration with Bionic Sight. AGTC has a significant intellectual property portfolio and extensive expertise in the design of gene therapy products, including capsids, promoters, and expression cassettes, as well as expertise in the formulation, manufacture and physical delivery of gene therapy products.

About Achromatopsia (ACHM)
Achromatopsia is an inherited retinal disease which is present from birth and is characterized by the lack of cone photoreceptor function. The condition results in markedly reduced visual acuity, extreme light sensitivity causing day blindness, and complete loss of color discrimination. Best-corrected visual acuity in persons affected by achromatopsia, even under subdued light conditions, is usually about 20/200, a level at which people are considered legally blind.

About X-linked Retinitis Pigmentosa (XLRP)
XLRP is an inherited condition that causes progressive vision loss in boys and young men. Characteristics of the disease include night blindness in early childhood and progressive constriction of the visual field. In general, XLRP patients experience a gradual decline in visual acuity over the disease course, which results in legal blindness around the 4th decade of life. AGTC was granted U.S. Food and Drug Administration (FDA) orphan drug designation in 2017, as well as European Commission orphan medicinal product designation in 2016, for its gene therapy product candidate to treat XLRP caused by mutations in the RPGR gene.

Forward Looking Statements

This release contains forward-looking statements that reflect AGTC's plans, estimates, assumptions and beliefs. Forward-looking statements include information concerning possible or assumed future results of operations, financial guidance, business strategies and operations, preclinical and clinical product development and regulatory progress, potential growth opportunities, potential market opportunities and the effects of competition. Forward-looking statements include all statements that are not historical facts and can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would" or similar expressions and the negatives of those terms. Actual results could differ materially from those discussed in the forward-looking statements, due to a number of important factors. Risks and uncertainties that may cause actual results to differ materially include, among others: gene therapy is still novel with only a few approved treatments so far; AGTC cannot predict when or if it will obtain regulatory approval to commercialize a product candidate or receive reasonable reimbursement; uncertainty inherent in clinical trials and the regulatory review process; risks and uncertainties associated with drug development and commercialization; factors that could cause actual results to differ materially from those described in the forward-looking statements are set forth under the heading "Risk Factors" in the Company's Annual Report on Form 10-K for the fiscal year ended June 30, 2019, filed with the SEC. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Also, forward-looking statements represent management's plans, estimates, assumptions and beliefs only as of the date of this release. Except as required by law, we assume no obligation to update these forward-looking statements publicly or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

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