AGTC Announces Publication of Preclinical Data that Support the Ongoing Clinical Development of Its XLRP Gene Therapy Program

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Preclinical studies validate the transgene and dosing used in the ongoing Phase 1/2 clinical trial in patients with XLRP due to mutations in the RPGR gene

GAINESVILLE, Fla., and CAMBRIDGE, Mass., Aug. 25, 2020 (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 announced that preclinical data validating the transgene (hRPGRco) that is being evaluated in the Company's ongoing Phase 1/2 clinical trial in patients with X-lined retinitis pigmentosa (XLRP) have been published in the July 15, 2020 print issue of *Human Gene Therapy*. The studies, which evaluated the safety and efficacy of hRPGRco and another XLRP transgene in a canine model of XLRP, demonstrated stronger expression of hRPGRco than the other transgene at all dose levels evaluated. Following subretinal administration in AGTC's proprietary rAAV2tYF vector, each of the XLRP transgenes corrected rod-cone opsin mislocalization, which are early markers of the disease, but the hRPGRco transgene demonstrated a broader therapeutic index. Study results also helped to guide the initial dosing in ongoing Phase 1/2 trial. As previously announced, AGTC expects to begin a Phase 2/3 clinical trial of its XLRP gene therapy candidate in the first quarter of 2021.

"Gene-based therapies contain multiple elements, and small differences in any one of those elements can have a significant impact on safety and efficacy," said Mark Shearman, PhD, Chief Scientific Officer of AGTC and an author on the publication. "We have shown our commitment to gene therapy through almost 20 years of experience and multiple clinical programs; this commitment demands that we conduct rigorous preclinical development work to ensure that we advance gene-therapy candidates that are optimized for safety and efficacy. These newly published preclinical data not only further validate the safety of our therapy but our choice of XLRP transgene for our clinical program."

The publication reports data from studies conducted in the RPGR-mutant canine model (XLRPA2), which has been validated as a model for human XLRP due to mutations in the RPGR gene. AAV vectors contained a "stabilized" version of the human RPGR gene (hRPGRstb), which is shorter than the wildtype DNA sequence, or a full-length version of the RPGR gene that has been codon optimized for improved expression and stability (hRPGRco). Both transgenes have previously been evaluated in the XLRPA2 model using an AAV5 vector. The current studies were conducted using AGTC's proprietary AAV2tYF vector, which is optimized for delivery to target cells within the retina. Safety was similar for the two transgenes. A key finding from the studies is that the AAV2tYF-hRPGRco vector resulted in higher RPGR gene expression compared with AAV2tYF-hRPGRstb and with AAV5-GRK1-hRPGRco. Additionally, the studies showed that while the mid-dose led to optimal correction of disease phenotypes, structural and functional rescue of photoreceptors was also achieved when treating at mid-stage disease with rAAV2tYFGRK1-hRPGRco at the lowest dose. This significantly expands therapeutic index and guided a starting dose for the ongoing Phase 1/2 clinical trial.

"Our focus on optimizing every aspect of gene therapy – including vector elements, routes of administration and manufacturing - differentiates AGTC from competitors," said Sue Washer, President and CEO of AGTC. "Our rigorous approach to developing best-in-class therapies is, we believe, the reason that our XLRP trial data to date, based on publicly released information, compares favorably with that reported by our competitors. With more than 100 patients enrolled in our collective clinical trials, studies have shown that each of our therapies have been generally safe and well-tolerated with no serious adverse events reported. We are currently enrolling additional patients into our expanded Phase 1/2 trial and look forward to initiating a Phase 2/3 trial in the first quarter of 2021."

About AGTC

AGTC is a clinical-stage biotechnology company developing genetic therapies for people with rare and debilitating ophthalmic, otologic and central nervous system (CNS) diseases. AGTC is a leader in designing and constructing all critical gene therapy elements and bringing them together to develop customized therapies that address real patient needs. The Company's most advanced clinical programs leverage its best-in-class technology platform to potentially improve vision for patients with an inherited retinal disease. AGTC has active clinical trials in X-linked retinitis pigmentosa and achromatopsia (ACHM CNGB3 & ACHM CNGA3). Its pre-clinical programs build on the Company's industry leading AAV manufacturing technology and scientific expertise. AGTC is advancing multiple important pipeline candidates to address substantial unmet clinical need in larger ophthalmology indications, optogenetics, otology and CNS disorders.

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, including statements regarding the expected commencement of its Phase 2/3, the timing for reporting trial data and AGTC's ability to enroll patients in its ongoing clinical trials, effectively design and successfully complete clinical trials. Forward-looking statements include information concerning possible or assumed preclinical and clinical product development and regulatory progress, future results of operations, financial guidance, business strategies and operations, potential growth opportunities, potential market opportunities, the effects of competition and the impact of the COVID-19 pandemic. 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; the direct and indirect impacts of the ongoing COVID-19 pandemic on our business, results of operations, and financial condition; 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 our most recent annual or quarterly report and in other reports we have 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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