uniQure Presents New Data Demonstrating Clinical Benefit in Hemophilia B Patients with Pre-Existing Anti-AAV5 Neutralizing Antibodies

May 21, 2018

-- New Data Further Demonstrating Favorable Immunogenicity Profile of AAV5 --

-- Data Suggest AAV5 Gene Therapies May be Viable Treatments for at Least 97% of Patients --

-- Data Presented at the American Society of Gene & Cell Therapy (ASGCT) Annual Meeting in Chicago --

LEXINGTON, Mass. and AMSTERDAM, the Netherlands, May 21, 2018 (GLOBE NEWSWIRE) -- uniQure N.V. (NASDAQ:QURE), a leading gene therapy company advancing transformative therapies for patients with severe medical needs, presented data showing successful liver transduction with the AAV5 vector in both non-human primates and humans with pre-existing anti-AAV5 neutralizing antibodies (NABs). In a study re-analyzing pre-treatment sera samples of the ten patients in the Phase I/II clinical trial of AMT-060, no relationship was detected between the presence of pre-treatment anti-AAV5 NABs and clinical outcomes of AMT-060 in patients with hemophilia B.

The data were presented on Saturday, May 19 by Anna Majowicz, Ph.D., a scientist in uniQure's immunology division, in an oral session at the American Society of Gene and Cell Therapy (ASGCT) Annual Meeting in Chicago, Illinois, the preeminent gene and cell therapy conference in the world.

"These important data presented at ASGCT bolster our confidence that AAV5 gene therapies can provide successful liver transduction in all or nearly all patients," stated Sander van Deventer, M.D., Ph.D., chief scientific officer of uniQure. "The study suggests that, in contrast to experience with other AAV vectors, detectable pre-existing neutralizing antibodies do not prevent successful gene transfer using AAV5 at clinical doses. In patients pre-exposed to AAV5 who tested positive for anti-AAV5 antibodies, therapeutic transgene expression was established with no cellular immune response observed after systemic administration of AAV5."

In ongoing gene therapy clinical trials using adeno-associated virus (AAV) vectors, patients who present levels of anti-AAV NABs are excluded from treatment due to concern that the efficacy of AAV vector delivery may be negatively influenced by their presence. In this study, uniQure researchers explored the impact of anti-AAV5 NAB levels on the efficacy of gene therapy delivery by an AAV5-based vector.

Using a highly-sensitive, luciferase-based anti-AAV5 NAB assay, uniQure researchers re-analyzed the pre-treatment sera of the ten patients who entered the Phase I/II gene therapy clinical trial of AMT-060. Seven of the ten patients returned results below the limit of detection of the assay, and three of the ten had positive anti-AAV5 NAB titers, of whom two were confirmed positive by additional assays. Yet no relationship was determined between the presence of pre-treatment anti-AAV5 NABs and clinical outcomes in the trial. In particular, the patient with the highest anti-AAV5 NAB titer (340) presented the highest mean FIX activity in his dose cohort. Neither of the two patients with confirmed positive anti-AAV5 NABs experienced elevated liver enzymes. Additionally, no clinically relevant T-cell immune responses to the capsid were detected in any of the ten patients.

uniQure also analyzed with the same NAB assay the pre-treatment sera of 14 non-human primates administered AMT-060. Prior to the administration of AMT-060, animals had anti-AAV5 NAB titers ranging from 56 to as high as 1,030. Despite the presence of these anti-AAV5 antibodies, researchers were able to administer AAV5-based gene therapy (AMT-060) resulting in successful and comparable transduction in all of the non-human primates at each dose.

In summary, anti-AAV5 NAB titers as high as 340 did not impair the clinical outcomes of AAV5-FIX (AMT-060) therapy in the Phase I/II trial. These findings are further supported by the results of studies demonstrating that anti-AAV5 NAB titers as high as 1,030 did not impair the efficacy of AAV5-FIX (AMT-060) liver transduction in non-human primates.

Based on these data, uniQure researchers performed an anti-AAV5 NAB screening of an additional 100 healthy male donors. Using an anti-AAV5 NAB cut-off titer of 1,030, at least 97% of this group would be eligible for AAV5-based gene therapy. Anti-AAV2 NAB and anti-AAV8 NAB titers were also analyzed in the donor group, and based on patient exclusion criteria currently applied in ongoing gene therapy trials, 37% of this group would be excluded from AAV8-based studies and 49% would be excluded from AAV2-based studies.

"uniQure's mission is to deliver on the promise of gene therapy to patients, and these findings suggest that AAV5-based gene therapies may be applicable to all, or nearly all, patients with hemophilia, Huntington's disease and other life-altering disorders," stated Matthew Kapusta, chief executive officer at uniQure. "We have substantial expertise with AAV5-based gene therapies, including years of clinical experience and the know-how to manufacture these gene therapies at commercial scale. We believe our modular platform will enable us to further develop best-in-class gene therapies for patients."

About uniQure
uniQure is delivering on the promise of gene therapy - single treatments with potentially curative results. We are leveraging our modular and validated technology platform to rapidly advance a pipeline of proprietary and partnered gene therapies to treat patients with hemophilia, Huntington's disease and cardiovascular diseases. www.uniQure.com

uniQure Forward-Looking Statements

This press release contains forward-looking statements. All statements other than statements of historical fact are forward-looking statements, which are often indicated by terms such as "anticipate," "believe," "could," "estimate," "expect," "goal," "intend," "look forward to", "may," "plan," "potential,"

"predict," "project," "should," "will," "would" and similar expressions. Forward-looking statements are based on management's beliefs and assumptions and on information available to management only as of the date of this press release. These forward-looking statements include, but are not limited to, our upcoming anticipated milestones, the development of our gene therapy product candidates, the transition to our AMT-061 product candidate, the success of our collaborations and the risk of cessation, delay or lack of success of any of our ongoing or planned clinical studies and/or development of our product candidates. Our actual results could differ materially from those anticipated in these forward-looking statements for many reasons, including, without limitation, risks associated with our and our collaborators' clinical development activities, collaboration arrangements, corporate reorganizations and strategic shifts, regulatory oversight, product commercialization and intellectual property claims, as well as the risks, uncertainties and other factors described under the heading "Risk Factors" in uniQure's Quarterly Report on Form 10-Q filed on April 30, 2018. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements, and we assume no obligation to update these forward-looking statements, even if new information becomes available in the future.

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