Arcturus Therapeutics Announces Initiation of Dosing ARCT-810 in Patients with Ornithine Transcarbamylase (OTC) Deficiency

December 7, 2020

SAN DIEGO--(BUSINESS WIRE)--Dec. 7, 2020-- Arcturus Therapeutics Holdings Inc. (the “Company”, “Arcturus”, Nasdaq: ARCT), a leading clinical-stage messenger RNA medicines company focused on the development of infectious disease vaccines and significant opportunities within liver and respiratory rare diseases, today announced that it has initiated dosing in its Phase 1b study of ARCT-810 in patients with Ornithine Transcarbamylase (OTC) deficiency, a serious disease with limited treatment options, at a clinical site in the United States. ARCT-810 is Arcturus’ flagship rare disease asset utilizing the Company’s novel systemically administered mRNA therapeutic platform.

The ongoing Phase 1b study will evaluate approximately twelve patients with OTC deficiency. ARCT-810 will be administered at doses between 0.2 mg/kg and 0.4 mg/kg, and all dose levels are expected to be within the therapeutic range, based on preclinical study data. The Phase 1b study will assess safety, tolerability and pharmacokinetics, as well as various exploratory biomarkers of drug activity.

Arcturus previously announced that it had completed the ARCT-810 Phase 1, dose escalation study in healthy subjects, at doses up to 0.4 mg/kg. In that study, ARCT-810 was found to be generally safe and well tolerated; no severe adverse events were observed, and no steroid pretreatment was required. The pharmacokinetic profile of ARCT-810 was favorable, and preliminary data shows that no ARCT-810 lipid was detectable in the plasma beyond 48 hours following drug administration.

“We are so encouraged by the progress of the ARCT-810 study in OTC deficiency and the promise this novel mRNA therapeutic approach holds for saving and improving the lives of patients affected with this devastating disorder,” said Cynthia Le Mons, Executive Director of National Urea Cycle Disorders Foundation.

“The initiation of dosing in the ARCT-810 Phase 1b clinical trial in patients with OTC deficiency builds upon the favorable prior Phase 1 study results, as well as encouraging preclinical data which showed that ARCT-810 resulted in robust OTC protein expression, improvements in ureagenesis and plasma ammonia, and increased survival,” said Steve Hughes, M.D., Chief Development Officer of Arcturus. “We are pleased to have now initiated dosing of ARCT-810 in patients with OTC deficiency. We look forward to obtaining clinical data throughout 2021.”

About Ornithine Transcarbamylase (OTC) deficiency

Ornithine Transcarbamylase (OTC) deficiency is a serious urea cycle disorder with a prevalence of approximately 10,000 worldwide. A lack of the OTC enzyme in liver cells results in high blood ammonia levels and can cause seizures, coma, and death in untreated patients. There are no FDA approved medicines for OTC deficiency.

About ARCT-810

ARCT-810 utilizes Arcturus' LUNAR® lipid-mediated delivery platform to deliver OTC messenger RNA to liver cells. Expression of OTC enzyme in the liver of patients with OTC deficiency has the potential to restore normal urea cycle activity, preventing neurological damage and the need for liver transplantation. The ARCT-810 program is supported by preclinical data in OTC deficiency murine models demonstrating that dosing of LUNAR-OTC results in robust ornithine transcarbamylase protein expression and activity resulting in improvements in ureagenesis and plasma ammonia and in increased survival.

About Arcturus Therapeutics

Founded in 2013 and based in San Diego, California, Arcturus Therapeutics Holdings Inc. (Nasdaq: ARCT) is a clinical-stage mRNA medicines and vaccines company with enabling technologies: (i) LUNAR® lipid-mediated delivery, (ii) STARR™ mRNA Technology and (iii) mRNA drug substance along with drug product manufacturing expertise. Arcturus’ diverse pipeline of RNA therapeutic and vaccine candidates includes self-replicating mRNA vaccine programs for SARS-CoV-2 (COVID-19) and Influenza, and other programs to potentially treat Ornithine Transcarbamylase (OTC) Deficiency, Cystic Fibrosis, and Cardiovascular Disease along with partnered programs including Glycogen Storage Disease Type 3, Hepatitis B Virus, and non-alcoholic steatohepatitis (NASH). Arcturus’ versatile RNA therapeutics platforms can be applied toward multiple types of nucleic acid medicines including messenger RNA, small interfering RNA, replicon RNA, antisense RNA, microRNA, DNA, and gene editing therapeutics. Arcturus’ technologies are covered by its extensive patent portfolio (200 patents and patent applications, issued in the U.S., Europe, Japan, China and other countries). Arcturus’ commitment to the development of novel RNA therapeutics has led to collaborations with Janssen Pharmaceuticals, Inc., part of the Janssen Pharmaceutical Companies of Johnson & Johnson, Ultragenyx Pharmaceutical, Inc., Takeda Pharmaceutical Company Limited, CureVac AG, Synthetic Genomics Inc., Duke-NUS Medical School, and the Cystic Fibrosis Foundation. For more information visit www.ArcturusRx.com. In addition, please connect with us on Twitter and LinkedIn.

Forward Looking Statements

This press release contains forward-looking statements that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. Any statements, other than statements of historical fact included in this press release, including those regarding strategy, future operations, collaborations, the ability or timing to initiate or complete preclinical and clinical development programs, including clinical studies planned for ARCT-810, the efficacy or safety of ARCT-810 or other Company programs, the likelihood of success of the Company’s

drug candidates, including ARCT-810, or of the Company's technology platforms, including STARR™ mRNA Technology or LUNAR® lipid-mediated delivery, the likelihood that any preclinical or clinical data will be predictive of future clinical results or sufficient for regulatory approval, the ability to enroll subjects in clinical trials, the likelihood that the success of ARCT-810, if successful, will be predictive of success of any future therapeutics of the Company and the impact of general business and economic conditions are forward-looking statements. Arcturus may not actually achieve the plans, carry out the intentions or meet the expectations or projections disclosed in any forward-looking statements such as the foregoing and you should not place undue reliance on such forward-looking statements. Such statements are based on management's current expectations and involve risks and uncertainties, including those discussed under the heading "Risk Factors" in Arcturus' Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on March 16, 2020 and in subsequent filings with, or submissions to, the SEC. Except as otherwise required by law, Arcturus disclaims any intention or obligation to update or revise any forward-looking statements, which speak only as of the date they were made, whether as a result of new information, future events or circumstances or otherwise.

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Source: Arcturus Therapeutics Holdings Inc.