Arrowhead Presents New Clinical Data on ARO-AAT at Alpha-1 National Education Conference

June 29, 2018

PASADENA, Calif.--(BUSINESS WIRE)--Jun. 29, 2018-- Arrowhead Pharmaceuticals Inc. (NASDAQ: ARWR) today will present preclinical and initial clinical data on ARO-AAT, the company's second generation subcutaneously administered RNA interference (RNAi) therapeutic being developed as a treatment for a rare genetic liver disease associated with alpha-1 antitrypsin (AAT) deficiency, at the Alpha-1 National Education Conference in San Francisco. These results represent the first human data derived from Arrowhead's pipeline of RNAi therapeutics that leverage its proprietary Targeted RNAi Molecules (TRiM™) platform.

Key new clinical data to be presented include the following:

- In the AROAAT1001 Phase 1 clinical study, a single, open-label dose of 100 mg of ARO-AAT in four subjects achieved 93% maximum serum AAT knockdown and 87% mean maximum serum AAT knockdown. At 8 weeks post-dose, mean serum AAT knockdown remained at 83%.
- The single 100 mg dose of ARO-AAT equates to an average dose of 1.4 mg/kg (range 1.0-1.6 mg/kg) in the subjects studied, who had an average weight of 72.9 kg (range 61.8-98.9 kg)
- ARO-AAT appeared to be generally well-tolerated and as of the data cutoff of June 11, 2018, the following safety measures were observed in 40 subjects (24 received ARO-AAT and 16 received placebo):
    - No serious or severe adverse events (AEs)
    - Most AEs reported were mild (one moderate gastroenteritis)
    - 2 cases of injection site erythema at 100 mg after 1st dose
        - Both were classified as mild and resolved within 48 hours
    - No clinically meaningful adverse changes in BUN, creatinine, ALT, AST or total bilirubin
    - No dose-related pattern of adverse laboratory changes seen

Preclinical data previously presented showed:

- Treatment with ARO-AAT for 8 weeks led to reductions in Z-AAT monomer and polymer content, and prevention of globule accumulation in the livers of young PiZ mice
- Two doses of 3 mg/kg of ARO-AAT led to 92% maximum serum AAT knockdown that was sustained for over 7 weeks following the second dose in nonhuman primates

A copy of the presentation slides can be accessed now on the Events and Presentations page under the Investors section of the Arrowhead website.

Chris Anzalone, Ph.D., president and chief executive officer of Arrowhead, said, "In our presentation today at the Alpha-1 National Education Conference, we will present initial human clinical data from a cohort of healthy volunteers in a Phase 1 study of ARO-AAT, the first clinical candidate to leverage Arrowhead's proprietary Targeted RNAi Molecule, or TRiM™, platform. The 100 mg open-label, single-dose cohort showed strong activity with a maximum serum AAT reduction of 93%. Based on our experience in primates and prior human clinical studies, we believe this knockdown level represents near full suppression of the liver production of AAT. In addition, the duration of effect we're seeing should enable monthly or less frequent dosing. We are excited by these results and would like to thank the Alpha-1 Foundation for providing us with a forum to discuss the development of ARO-AAT with the Alpha-1 community."

Henry R. Moehring, president and chief executive officer of the Alpha-1 Foundation, said, "We know the Arrowhead team well and thank them on behalf of the Alpha-1 community for their dedication to developing a treatment for the liver disease associated with alpha-1 antitrypsin deficiency. We view the partnership between Arrowhead, the Alpha-1 Foundation, and our venture philanthropy subsidiary, The Alpha-1 Project, as a great example of how industry and disease foundations can work together on new innovative treatments that benefit patients with rare diseases."

Arrowhead's presentation is part of a session titled, "Driving New Therapies and Tools in Alpha-1 – Presentation & Panel Discussion," scheduled for 3:45-5:20 p.m. PDT. The Alpha-1 National Conference is the largest annual gathering of Alphas, their families, leading healthcare professionals, and industry in the world. It is a three day event with educational programs given by national experts and leaders in the Alpha-1 field. Additional information about the conference can be found on the Alpha-1 Foundation website.

AROAAT1001 (NCT03362242) is a Phase 1 single- and multiple-ascending dose study to evaluate the safety, tolerability, pharmacokinetics, and effect of ARO-AAT on serum alpha-1 antitrypsin levels in healthy adult volunteers. The study includes 7 cohorts in which 16 subjects receive placebo and 28 subjects receive single or multiple doses of ARO-AAT at doses of 35, 100, 200, or 300 mg. Additional cohorts were planned at a dose of 400 mg, but were deemed unnecessary based on the observed activity at lower doses.

About Arrowhead Pharmaceuticals

Arrowhead Pharmaceuticals develops medicines that treat intractable diseases by silencing the genes that cause them. Using a broad portfolio of

RNA chemistries and efficient modes of delivery, Arrowhead therapies trigger the RNA interference mechanism to induce rapid, deep, and durable knockdown of target genes. RNA interference, or RNAi, is a mechanism present in living cells that inhibits the expression of a specific gene, thereby affecting the production of a specific protein. Arrowhead's RNAi-based therapeutics leverage this natural pathway of gene silencing.

For more information, please visit www.arrowheadpharma.com, or follow us on Twitter @ArrowheadPharma. To be added to the Company's email list and receive news directly, please visit http://ir.arrowheadpharma.com/email-alerts.

Safe Harbor Statement under the Private Securities Litigation Reform Act:

This news release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. These statements are based upon our current expectations and speak only as of the date hereof. Our actual results may differ materially and adversely from those expressed in any forward-looking statements as a result of various factors and uncertainties, including the safety and efficacy of our product candidates, the duration and impact of regulatory delays in our clinical programs, our ability to finance our operations, the future success of our scientific studies, our ability to successfully develop drug candidates, the timing for starting and completing clinical trials, rapid technological change in our markets, and the enforcement of our intellectual property rights. Our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q discuss some of the important risk factors that may affect our business, results of operations and financial condition. We assume no obligation to update or revise forward-looking statements to reflect new events or circumstances.

Source: Arrowhead Pharmaceuticals, Inc.

View source version on businesswire.com: https://www.businesswire.com/news/home/20180629005141/en/

Source: Arrowhead Pharmaceuticals, Inc.

Arrowhead Pharmaceuticals, Inc.
Vince Anzalone, CFA
626-304-3400
ir@arrowheadpharma.com
or
Investors and Media:
LifeSci Advisors, LLC
Brian Ritchie
212-915-2578
britchie@lifesciadvisors.com
www.lifesciadvisors.com