



Arrowhead Begins Triple Combination Cohort in Chronic HBV Patients and Earns \$25 Million Milestone Payment from Janssen

April 24, 2019

PASADENA, Calif.--(BUSINESS WIRE)--Apr. 24, 2019-- Arrowhead Pharmaceuticals Inc. (NASDAQ: ARWR) today announced that it has begun dosing in a new triple combination cohort (cohort 12) that includes JNJ-3989 (formerly ARO-HBV) and additional undisclosed agents selected by Janssen Pharmaceuticals, Inc. in its ongoing Phase 1/2 study (AROHBV1001) in patients with chronic hepatitis B virus (HBV). In connection with the start of this new cohort, Arrowhead has earned a \$25 million milestone payment from Janssen Pharmaceuticals, Inc., part of the Janssen Pharmaceutical Companies of Johnson & Johnson.

Christopher Anzalone, Ph.D., president and chief executive officer at Arrowhead, said: "Both Arrowhead and Janssen share the aim to advance transformational medicines that achieve higher rates of functional cure with a finite treatment duration for patients with chronic hepatitis B viral infection. Beginning this new triple combination cohort in our ongoing AROHBV1001 study has the potential to generate valuable data rapidly."

AROHBV1001 ([NCT03365947](#)) is a Phase 1/2 clinical study evaluating the safety, tolerability, and pharmacokinetic effects of single-ascending doses (SAD) of ARO-HBV in healthy adult volunteers, as well as the safety, tolerability, and pharmacodynamic effects of multiple-ascending doses (MAD) of ARO-HBV in patients with chronic HBV.

Arrowhead entered into a license and collaboration agreement with Janssen in October 2018 to develop and commercialize ARO-HBV. Under the initial terms of the HBV license agreement, Arrowhead was eligible to receive a \$50 million milestone payment linked to a Phase 2 study. Arrowhead and Janssen subsequently amended the HBV license agreement to accelerate the payment of \$25 million of the \$50 million Phase 2 milestone upon the initiation of cohort 12 of the AROHBV1001 trial. Arrowhead is eligible to receive the remaining \$25 million upon the initiation of a Phase 2 study by Janssen.

Hepatitis B infection is a life-threatening viral infection of the liver, which can cause cirrhosis — scarring of liver tissue — and liver cancer if the infection becomes chronic. The World Health Organization cites that hepatitis B is a global public health problem with 257 million people living with the disease, resulting in 887,000 deaths in 2015.¹ While a preventive vaccine is available, cure rates for those infected remain low and most patients will endure lifelong therapy.

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 likelihood and timing of the receipt of future milestone and licensing fees, the future success of our scientific studies, our ability to successfully develop and commercialize 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.

¹ World Health Organization (WHO). Hepatitis B. July 2017. Available at: <http://www.who.int/mediacentre/factsheets/fs204/en/>

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