



December 18, 2012

Arrowhead and Shire Enter into Collaboration and License Agreement to Develop Peptide-Targeted Therapeutics

PASADENA, Calif. — December 18, 2012 — Arrowhead Research Corporation (NASDAQ: ARWR), a targeted therapeutics company, today announced that it has signed a research collaboration and license agreement with Shire AG, to develop and commercialize targeted peptide-drug conjugates (PDCs) by utilizing Arrowhead's human-derived Homing Peptide platform and Shire's therapeutic payloads. Arrowhead will receive research funding and could be eligible for development, regulatory, and commercialization milestone payments of up to \$32.8 million for each development candidate, plus additional milestone payments for a second indication, and royalties on worldwide sales. Additional financial terms of the agreement were not disclosed.

"Shire's expertise in developing innovative medicines for rare diseases makes them an ideal partner for Arrowhead as we advance our platform of human-derived Homing Peptides," said Dr. Chris Anzalone, President and Chief Executive Officer of Arrowhead. "Our library of over 42,000 unique targeting peptide sequences can potentially be used to deliver therapeutics to more than 30 tissue types while avoiding non-specific uptake. We view this collaboration as a significant validation of our technology and discovery capabilities. Moreover, this agreement underscores our strategy of building value by developing an internal pipeline of PDCs and RNAi therapeutics and by working with partners to improve their proprietary medicines with our peptide targeting."

"With this novel platform technology, Shire has the potential to move into a wider range of orphan diseases," said Dr. Phil Vickers, Head of R&D at Shire HGT. "Our goal is to develop treatments that profoundly change the lives of patients with a variety of rare life-altering and life-threatening conditions. This collaboration with Arrowhead is evidence of Shire's commitment to patients with rare diseases and our intent to work with the best partners to achieve this."

Under the agreement, Arrowhead will identify peptides that selectively bind and internalize in an undisclosed tissue type and that are capable of delivering a therapeutic payload to that tissue. The company will receive funding for its internal and external research program-related costs and Shire will have an option to obtain an exclusive license to develop and commercialize a therapeutic agent targeted by the designated peptides and be responsible for clinical development and commercialization of products arising from the collaboration.

About Arrowhead Research Corporation

Arrowhead Research Corporation is a clinical stage targeted therapeutics company with development programs in oncology, obesity, and chronic hepatitis B infection. The company is leveraging its platform technologies to design and develop peptide-drug conjugates (PDCs) which specifically home to cell types of interest while sparing off-target tissues, creates targeted drugs based on the gene silencing RNA interference (RNAi) mechanism, and works with partners to create improved versions of traditional small molecule drugs.

For more information please visit <http://www.arrowheadresearch.com>, or follow us on Twitter [@ArrowRes](https://twitter.com/ArrowRes). To be added to the Company's email list to receive news directly, please send an email to ir@arrowres.com

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 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. Arrowhead Research Corporation's 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.

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