



Horizon Pharma plc and HemoShear Therapeutics Enter into Exclusive Drug Discovery Collaboration in Gout

January 3, 2019

Deal Combines HemoShear's REVEAL-Tx™ Platform and Drug Discovery Capabilities with Horizon's Rheumatology Drug Development and Commercialization Expertise

DUBLIN & CHARLOTTESVILLE, Va.--(BUSINESS WIRE)--Jan. 3, 2019-- Horizon Pharma plc (Nasdaq: HZNP) and HemoShear Therapeutics, LLC, a privately held biotechnology company, today announced a collaboration to discover and develop novel therapeutics for gout.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20190103005139/en/>

"As we continue to grow our pipeline, we are committed to addressing unmet treatment needs for people with gout as well as solidifying our leadership in uncontrolled gout," said Shao-Lee Lin, M.D., Ph.D., executive vice president, head of research and development and chief scientific officer, Horizon Pharma plc. "We are optimistic that this collaboration with HemoShear will eventually identify new gout treatment options."

HemoShear's proprietary disease modeling platform, *REVEAL-Tx™*, combines physiological and computational models of disease to identify novel treatment approaches and select drug candidates in a human-relevant disease context.

"We believe that our proven ability to replicate and interrogate diseases for drug discovery via our platform, coupled with Horizon's expertise in drug development and in commercializing therapeutics, will yield better therapies for gout patients," said Jim Powers, chief executive officer, HemoShear.

Under the terms of the agreement, HemoShear will receive upfront payments and R&D funding, and Horizon will receive exclusive access to HemoShear's proprietary disease modeling platform to discover new therapeutics for gout. Successful development and commercialization of multiple therapies by Horizon will make HemoShear eligible to receive milestone payments of potentially more than \$500 million plus royalties. Further financial terms were not disclosed.

Gout is a chronic, progressive inflammatory form of arthritis that is caused by excess uric acid in the body, and needs to be managed aggressively. If uric acid levels in the blood remain elevated, thin rod-like crystals can form and deposit in the joints, which can lead to severe pain, tenderness, stiffness, swelling and joint damage. In addition to the joint damage, urate crystals can also deposit in other organs of the body, and if left unmanaged, gout can lead to significant tissue damage. Uncontrolled gout occurs when people living with gout continue to have high levels of uric acid and gout symptoms despite the use of standard oral urate-lowering therapies.

About HemoShear Therapeutics

HemoShear Therapeutics discovers novel biological targets and advances drug programs to treat metabolic disorders with significant unmet patient need. HemoShear's proprietary drug discovery platform, *REVEAL-Tx™*, enables HemoShear to create best-in-class, biologically relevant human disease models to uncover and explain the underlying mechanisms of disease, translate those discoveries into drug candidates, and predict which drug candidates will treat patients successfully. HemoShear's current drug discovery programs are focused on nonalcoholic steatohepatitis (NASH) and propionic and methylmalonic acidemias, rare genetic metabolic disorders. For more information visit www.HemoShear.com.

About HemoShear's *REVEAL-Tx™* Platform

Existing human experimental disease models do not reliably represent human biology. HemoShear has developed a transformational platform, *REVEAL-Tx™*, which applies principles of physiological blood flow to tissue from patients to recapitulate disease. *REVEAL-Tx™* provides unprecedented insights into complex pathophysiological pathways by replicating human disease with great accuracy. HemoShear's human disease models, in combination with its advanced proprietary computational biology tools, identify novel treatment approaches and reduce risk of failure by enabling HemoShear's scientists to deeply interrogate disease pathways, test hypotheses and select meaningful targets in physiologically accurate disease conditions.

About Horizon Pharma plc

Horizon Pharma plc is focused on developing and commercializing innovative medicines that address unmet treatment needs for rare diseases, and rheumatic diseases, with a special interest for diseases for which a deep understanding of immunology may lead to innovative ways to control the disease. By fostering a growing pipeline of medicines in development and through aggressive life cycle management of our medicines, we strive to make a powerful difference for patients, their caregivers and physicians. For us, it's personal: by living up to our own potential, we are helping others live up to theirs. For more information, please visit www.horizonpharma.com, follow us [@HZNPplc](https://twitter.com/HZNPplc) on Twitter, like us on [Facebook](https://www.facebook.com/HorizonPharma) or explore career opportunities on [LinkedIn](https://www.linkedin.com/company/horizon-pharma).

Forward Looking Statements

This press release contains forward-looking statements, including, but not limited to, statements related to the potential benefits of the parties' collaboration, Horizon's strategy, plans, objectives, expectations and intentions, including with respect to the potential for HemoShear to discover, and Horizon to develop and commercialize, new or better therapeutics for gout, and other statements that are not historical facts. These forward-looking statements are based on Horizon's expectations and assumptions as of the date of this press release and inherently involve significant risks and uncertainties. Actual results may differ materially from those in these forward-looking statements as a result of these risks and uncertainties, which

include, without limitation, risks associated with pre-clinical and clinical development, such as the risk that future studies and trials are not initiated or completed and the fact that prior pre-clinical results may not predict the outcome of future studies or trials, as well as those described in Horizon's filings with the United States Securities and Exchange Commission, including those factors discussed under the caption "Risk Factors" in those filings. Forward-looking statements speak only as of the date of this press release and neither HemoShear nor Horizon undertake any obligation to update or revise these statements, except as may be required by law.

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Source: Horizon Pharma plc

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