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FINANCE

$40M series A sets up HemoShear to complete evolution from service play to clinical-stage biotech

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After securing $40 million in its first institutional round this week, HemoShear will make the next step in its evolution from service play to drug developer with in-house metabolic disease programs in Phase II testing.

Suvretta Capital Management led the financing, joined by Janus Henderson Investors, Adage Capital Management and undisclosed private investors.

HemoShear Therapeutics LLC launched in 2008 as a service company that provided its disease modeling platform to pharmas that would use it to test their drug candidates ahead of human studies.

The platform, REVEAL-Tx, is a combination of biological and computational models of diseases. It models human diseases *in vitro* by subjecting 3D cultures of primary patient cells to physiological phenomena such as hemodynamic forces, multilayer biological transport processes and cell-to-cell communication.

The company then generates transcriptomic and functional data to build computational models of a disease and generate hypotheses around targets. Drug candidates developed against the targets are subsequently tested in the biological model.

In 2015, the company began to focus internally on developing therapies for rare metabolic diseases. "We changed the focus of the business and decided that there were much more rewarding and valuable applications of our technology than just to provide services," CEO Jim Powers told BioCentury.

HemoShear's lead program, HST5040, is slated to begin Phase II testing this quarter to treat patients with propionic acidemia (PA) or methylmalonic acidemia (MMA), two indications with no available treatments besides a strict diet, which is often not enough to prevent organ failure. Data are expected by year-end.

The therapy's target is undisclosed, but the small molecule acts to reverse the hallmark of acidemias: abnormal buildup of toxins throughout the body due to the inability to break down amino acids.

Powers said the company used liver cells from children with PA or MMA who had received a transplant to replicate the biology of the disease using REVEAL-Tx.

"We were the first ever to create a biologically responsive model of PA," said Powers. The model was published in *Molecular Genetics and Metabolism* in 2016.

Powers said HemoShear discovered the molecule independently, and later found out it had previously been "made and tested, but it had never made the market and isn't being studied for any indication that we know of," said Powers. He said the compound's safety had been established in prior Phase I and Phase II trials conducted for another indication by a different sponsor, but declined to disclose details.

Until this week's financing, HemoShear had been supported by individuals, family offices, NIH and small business innovation research (SBIR) grants as well as upfront and milestone payments from partnerships.

HemoShear partnered with Takeda Pharmaceutical Co. Ltd. (Tokyo:4502; NYSE:TAK) in 2017 to discover and develop therapeutics for liver diseases including non-alcoholic steatohepatitis (NASH) and in 2019 gave Horizon Pharma plc exclusive access to REVEAL-Tx to discover new therapeutics for gout.

"Both of those relationships are still progressing, and they're earning milestones," said Powers.

The $40 million will also support future clinical studies and development of earlier stage programs, such as HST301 to treat maple syrup urine disease.

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