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HepaLife's Bioartificial Liver Successful in Important Studies Modeling Human Liver Failure Environment

Success in model of human liver failure environment prompts Company's move toward in vivo animal studies

BOSTON--

HepaLife Technologies, Inc. (OTCBB: HPLF) (FWB: HL1) (WKN: 500625) today announced that the Company's proprietary bioartificial liver device has successfully demonstrated key liver functions in a model of the human liver failure environment, prompting researchers to move towards in vivo animal studies.

"Our scientists have confirmed the capability of our bioartificial liver device to successfully perform with human plasma, a key variable when replicating human liver failure," stated Mr. Frank Menzler, President and CEO of HepaLife Technologies, Inc. "Most importantly, our bioartificial liver has shown a very important capacity to remove toxic ammonia at a rate that supports our move towards in vivo animal trials, a necessary step to ultimately filing for product approval."

In tests designed to represent the environment present when treating human liver failure patients, HepaLife's patented PICM-19 liver cells were exposed to human blood plasma and toxic ammonia. Notably, HepaLife's PICM-19 cell line successfully removed toxic ammonia, produced urea, and expressed CYP-450 enzymes - - all leading indicators of liver function.

One of the key functions of the liver is the detoxification of ammonia. The primary route is by synthesizing urea. Patients with acute liver failure have compromised ammonia detoxification capabilities which can result in brain damage. Researchers performed ammonia challenges on HepaLife's PICM-19 cells, exposing the cells to either complete tissue culture medium or normal human plasma in parallel cultures. In both cases, the ammonia challenge was reduced by 80% within identical timeframes, a substantial achievement.

In the same tests, an increase in urea concentration was also observed in each of the two conditions, and the amount of urea produced in cells exposed to human blood plasma was equivalent to the amount produced by the control culture. Additionally, the results demonstrated that despite exposure to human blood plasma, HepaLife's patented PICM-19 cells are able to continue to express high levels of cytochrome P-450 enzymes, a key

liver-related function in the detoxification of drugs and xenobiotics.

Of note, the ammonia utilization models constructed from successive ammonia challenge experiments of the PICM-19 cells inside HepaLife's bioartificial liver indicate that the system exhibits more than enough capacity to treat animals in initial in vivo tests.

In earlier tests, PICM-19 cells have outperformed other cell lines, including the world's most widely used human liver cell line (HepG2-C3A), in ammonia detoxification, urea production and P-450 activity. HepaLife's patented PICM-19 cell line is also the only known embryonic liver stem cell line of its kind with the ability to produce substantial amounts of urea in an in vitro system.

HepaLife(TM) Bioartificial Liver

Incorporating the PICM-19 cell line, HepaLife is developing the first-of-its-kind bioartificial liver. HepaLife's bioartificial liver, currently under development, is designed to operate outside the patient's body. The bioartificial liver is envisioned to mimic important functions of the human liver by circulating the patient's blood inside the device, where it is exposed to HepaLife's patented PICM-19 liver stem cells, thus processing the patient's blood-plasma by removing toxins, enhancing metabolic function, and ultimately imitating the liver's natural function.

Intended for the treatment of liver failure, the HepaLife(TM) bioartificial liver device consists of three basic components: a plasma filter, separating the patient's blood into blood plasma and blood cells; the bioreactor, a unit filled with the patented PICM-19 liver stem cell line which biologically mimics the liver's function; and the HepaDrive(TM), a perfusion system for pumping the patient's plasma through the bioreactor while controlling gas supply and temperature for best possible performance of the cells.

ABOUT HEPALIFE TECHNOLOGIES, INC.

Based in Boston, Massachusetts, HepaLife Technologies, Inc. (OTCBB: HPLF) (FWB: HL1) (WKN: 500625) is a developer of cell-based medical technologies addressing prevalent human health concerns.

Current cell-based technologies under development by HepaLife include 1) the first-of-its-kind artificial liver device, 2) proprietary in-vitro toxicology and pre-clinical drug testing platforms, and 3) novel cell-culture based vaccine production methods for the manufacture of vaccines against H5N1 avian influenza and other viruses.

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Source: HepaLife Technologies, Inc.