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New Artificial Liver Tests: HepaLife's 'PICM-19' Demonstrate Advantages Over Today's Best-Available Liver Cells

HepaLife's patented cells show highest levels of liver-specific metabolic activity - key to mimicking liver behavior in artificial liver device; Unlike freshly harvested liver cells, PICM-19 are disease free, genetically consistent, and not vulnerable to donor's medical history.

BOSTON--

HepaLife Technologies, Inc. (OTCBB:HPLF) (FWB:HL1) (WKN:500625) today announced that results from new tests of the Company's patented PICM-19 liver cells show the highest levels of important liver-specific metabolic activity key to mimicking human liver function, and further demonstrate the PICM-19's ability to perform equivalent to freshly harvested adult porcine hepatocytes, traditionally regarded the best available liver cell source for bioartificial liver support. HepaLife's PICM-19 liver cells also significantly outperform the world's most widely used human liver cell line.

In ongoing tests, scientists have compared HepaLife's PICM-19 cells against the world's leading human liver cell line (HepG2-C3A) and against freshly-harvested liver cells (hepatocytes) from pigs, recognized as the closest animal species for mimicking human liver function. Of concern, the HepG2-C3A human liver cell line is tumor-derived, created by extracting cells from a human hepatoblastoma, a very rare cancer tumor mainly occurring in infants and children. Freshly harvested pig liver cells pose other risks, such as the potential for infecting human patients with animal diseases carried by individual donor pigs.

Unlike freshly harvested liver cells from animals and tumor-derived human cell lines, HepaLife's PICM-19 liver cells are disease free and genetically consistent, and are neither cancer derived nor vulnerable to the medical history of the donor source - all important considerations for integration of liver cells inside an artificial liver device for acute liver failure in humans.

According to researchers, new tests have shown that HepaLife's PICM-19 cells exhibit the highest levels of Phase 2 conjugation activity, an important mechanism of the liver to excrete toxic substances. In contrast, freshly harvested adult pig hepatocytes, showed levels of Phase 2 activity that was either identical or slightly lower than the PICM-19. In comparison, the human liver cell line showed very low Phase 2 activity.

The data also demonstrates that HepaLife's PICM-19 cells are able to express high levels of cytochrome P-450 enzymes, a key liver-related function in the detoxification of drugs and xenobiotics. In contrast, the HepG2-C3A human liver cell line showed very low or no detectable P450 activity at all.

"Yet again, these results clearly demonstrate our PICM-19 cell line's superior performance in key, liver-specific functions such as the essential ability to metabolize and excrete toxic the same substances present in liver failure patients," explained Mr. Frank Menzler, President and CEO of HepaLife Technologies, Inc. "Our ability to outperform existing human cell lines and successfully compete against primary liver cells sets us apart from anyone else, and is vital to effectively replicating the human liver's function in our bioartificial liver device."

The central role played by the liver is the clearance and transformation of toxins and drugs. Drug metabolism is usually divided into two phases: Phase 1 in which cytochrome P-450 enzymes metabolize and activate many toxicologically important substrates to prepare a drug for Phase 2. In this second phase, activated drugs are made water-soluble to be actively transported and excreted via bile or plasma.

Another key function of the human liver is the detoxification of ammonia, primarily through the synthesis of urea. Patients with acute liver failure have compromised ammonia detoxification capabilities which can result in brain damage. In test results announced today, HepaLife's PICM-19 cells successfully removed identical high levels compared to adult pig hepatocytes and almost four times more than HepG2-C3A. Most significantly, ammonia was synthesized into urea by the PICM-19 cells. The HepG2-C3A cells lack this important functionality. Notably, HepaLife's PICM-19 cell line is the only known liver stem cell line of its kind with the ability to produce substantial amounts of urea.

Intended for the treatment of liver failure, the HepaLife(TM) Bioartificial Liver device consists of three basic components: (1) a plasma filter, separating the patient's blood into blood plasma and blood cells; (2) the bioreactor, a unit filled with the patented PICM-19 liver stem cell line which biologically mimics the liver's function; and (3), 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.

HepaLife is working towards the first-of-its-kind bioartificial liver device for acute liver failure using the Company's patented PICM-19 liver stem cell line. The HepaLife(TM) bioartificial liver, currently under development, is designed to serve as a supportive device, either allowing the liver to regenerate upon acute liver failure, or to bridge the patient's liver functions until a transplant is available.

Utilizing its patented liver stem cell line PICM-19, HepaLife is designing testing platforms

to improve the pharmaceutical industry's capability to evaluate drug toxicity and possible side-effects before pharmaceutical compounds are commercially distributed.

For additional information, please visit www.HepaLife.com.

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most recent Form 10-Q and Form 10-K filings with the Securities and Exchange Commission. These reports and filings may be inspected and copied at the Public Reference Room maintained by the U.S. Securities & Exchange Commission at 100 F Street, N.E., Washington, D.C. 20549. You can obtain information about operation of the Public Reference Room by calling the U.S. Securities & Exchange Commission at 1-800-SEC-0330. The U.S. Securities & Exchange Commission also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the U.S. Securities & Exchange Commission at <http://www.sec.gov>. The Company undertakes no obligation to publicly release the results of any revisions to these forward looking statements that may be made to reflect the events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

Source: HepaLife Technologies, Inc.