# HμRELVIRAL™ MICROLIVER TESTING PLATFORM SUSTAINS HEPATITIS B VIRUS INFECTION IN ACTUAL HUMAN LIVER CELLS FOR OVER 30 DAYS

*Nature Communications publication marks HuRELviral™'s commercial launch.*
*HuRELviral™ enables measurement of a drug's impact directly on hepatitis B virus's DNA.*
*Breakthrough tool in race to find cures for HBV and other infectious diseases of the liver.*

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Hurel Corporation ("Hurel"), a world-leading provider of microlivers—patented liver cell co-cultures that bring enhanced pre-clinical prediction to drug discovery and development—today announced the commercial launch of HuRELviral™, an application that for the first time enables a hepatitis B virus ("HBV") infection to be maintained in a culture of actual human liver cells for over thirty days. This technical breakthrough, achieved without artificially suppressing the cells' innate, antiviral cell-signaling pathways, is expected to equip virologists with unprecedented insight into a drug candidate's potential to cure chronic HBV.

The results described above are the subject of a study published in the July 25, 2017 edition of the scientific journal *Nature Communications*. Led by Alexander Ploss, Ph.D., Assistant Professor in the Department of Molecular Biology at Princeton University, the study was carried out by Princeton virologists working in collaboration with liver tissue engineers from Hurel.

In its most fundamental finding, the study demonstrates HuRELviral™'s capacity to maintain stable viral infection and robust liver cell function over a 30-day experimental time course—significantly longer than has ever been previously reported with physiologically relevant, actual human liver cells. In an HBV infection, viral DNA invades the human host's liver cells and then remains within them as the entrenched, chronically generative source of HBV's symptoms. A true cure for HBV thus entails eradicating the viral DNA, but current in vitro liver models lack sufficient longevity and physiological realism to let researchers adequately assess what direct, long-term effect on viral DNA a drug may actually have. By contrast, the characterization data in the *Nature Communications* publication shows that HuRELviral™ enables stable infection and cellular competency to be maintained over a time course long enough to undertake repeat-dose treatment of HBV-infected cells, and long enough to measure a drug's direct effect on viral DNA. This newly demonstrated capability is expected to bring significant improvement to high-throughput HBV screening programs as well as to mechanistic studies of HBV medicines.

"The establishment of a co-culturing system of human primary hepatocytes and non-parenchymal stromal cells for extended HBV infection is a valuable addition to the

armamentarium of cell culture model systems for the study of HBV biology and therapeutic development, which has been hampered by a relative lack of efficient infectious cell culture systems," said T. Jake Liang, a senior investigator at the National Institute of Diabetes and Digestive and Kidney Diseases, who was not involved in the research.

Commenting on the *Nature Communications* paper and the commercial launch of the H*u*REL*viral*™ application, Hurel CEO Robert Freedman said, "Alex Ploss and his Princeton team have taken the attributes of robustness, physiological relevance, and long-enduring functionality that characterize Hurel's microlivers, and they have harnessed those attributes to produce a step-change improvement of the toolkit for studying infectious liver disease. While their paper is directed to HBV, we anticipate that HurelViral™ will prove similarly useful in the research of malaria, dengue virus, and other forms of hepatitis.

"Hurel's role is now to translate our academic colleagues' accomplishment into practical benefits made available to the liver disease research community worldwide."

**About hepatitis B virus ("HBV")**

HBV has produced chronic infections in over a quarter billion people globally. Chronic HBV carriers are at risk of developing fibrosis, cirrhosis and liver cancer. The World Health Organization estimates that over 600,000 people die annually from causes attributable to HBV. Effective medicines for hepatitis C virus ("HCV") won FDA approval and reached the market in 2013 and 2014, numerous pharmas and biotech are currently competing to find a cure for HBV.

**About H*μ*REL*viral*™**

H*u*REL*viral*™ is an infectious liver "disease model" that utilizes Hurel's patented, primary hepatocyte-based microlivers. Available in micro-titer plates of all standard well sizes (including 96-well and 384-well sizes that support high-throughput screening), H*u*REL*viral*™is air-shipped from Hurel's New Jersey production facilities, arriving at the receiving scientist's lab "plug-and-play" ready to be dosed with inoculum after brief acclimation in an incubator.

**About Hurel**

Hurel Corporation is a world-leading provider of patented, primary hepatocyte-based microlivers and microfluidic cell-based assay platforms. Hurel's products are distinctive for their high, stable, and long-enduring levels of metabolic and general cellular competency. Utilizing its patent-pending method of packaging its microlivers for "warm" intercontinental air shipment, Hurel delivers its products to pharmaceutical and biotech researchers worldwide. Hurel also offers in vitro safety- and DMPK-directed contract research services based on its microliver products. For more information please visit www.hurelcorp.com.