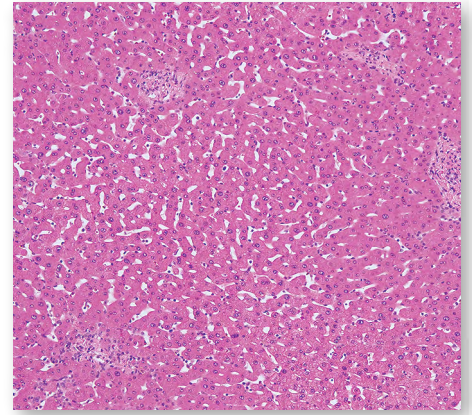


Human Hepatocytes

High quality, fully characterized cells from diverse donor populations, tailored to research.

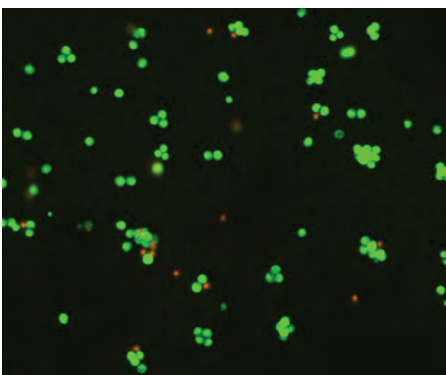


LifeNet Health LifeSciences primary human hepatocytes meet the specific needs of a wide range of scientific research applications, including drug development and hepatotoxicity testing. Donated liver tissues are procured under state-of-the-art conditions using the highest standards for tissue recovery and preservation, which utilize enhanced tissue handling and transportation methods, and minimize warm and cold ischemia times to optimize tissue processing outcomes. These measures, combined with refined cell isolation techniques and advanced post-thaw characterization, represent a new industry standard for hepatocyte quality and performance.

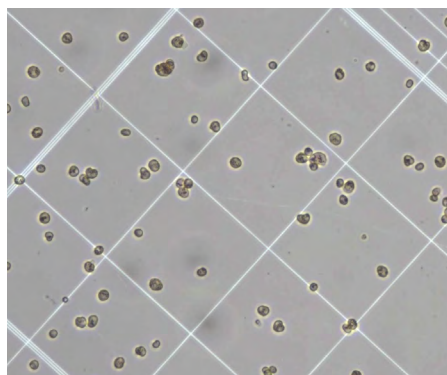
Prior to release, each batch of cryopreserved hepatocytes is carefully characterized to determine the post-thaw results. The batch-specific functionality and clinical data includes the following:

- Cell viability and yield per vial.
- Morphological integrity and attachment efficiency.

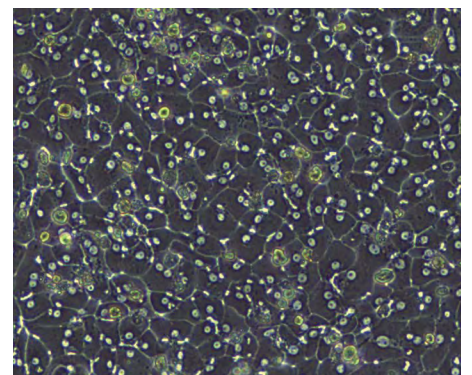
- Optimal seeding density (based on a 24- and 96-well plate formats).
- CYP enzyme activity using prototype selective substrates for all the major enzymes pertinent to drug discovery and development.
- Genotyping of pharmacologically relevant phase I and II enzymes.
- Histopathology assessment of tissue of origin by board-certified pathologist; NAS and fibrosis stage provided along with H&E and trichrome stained images.
- Each batch comes with a comprehensive Certificate of Analysis (CoA) with representative images, relevant donor demographics, BMI, pre-mortem liver function lab values, serological test results, and pertinent tobacco, alcohol, drug, and medication history.



Neonatal hepatocytes, fluorescent image for viability determination obtained using ViaStain™ AOPI staining solution and a Nexcelom Cellometer®



Adult primary hepatocytes (post-thaw, brightfield optics)



Adult primary human hepatocytes, day 4 in culture (phase contrast microscopy)

Categories of Cryopreserved Human Hepatocyte Lots

The following major categories of cryopreserved hepatocytes are currently available through LifeNet Health LifeSciences. Additional options or categories not listed below may be considered upon individual request.

Adult Suspension and Short-term Plateable:

Primary adult human hepatocytes are considered the preferred method for determining the metabolic stability and intrinsic clearance of new compounds in development. Our suspension and short-term plateable hepatocytes are characterized for drug-metabolizing enzyme activity using prototype selective substrates for major phase I and II metabolic pathways. Short-term plateable hepatocytes are guaranteed to maintain stable, confluent monolayers from one to four days.

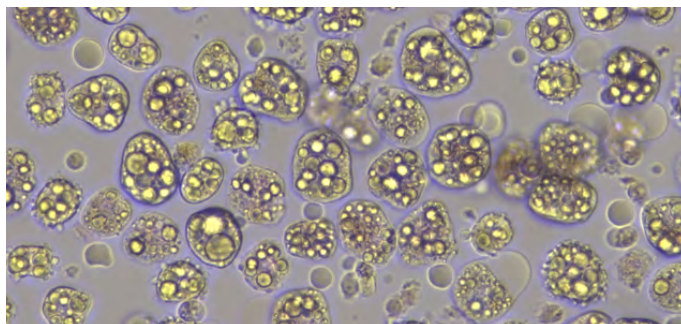
Adult Mid- and Long-term Plateable:

Use of cultured primary human hepatocytes has become the accepted best practice for conducting *in vitro* testing of new drugs for their potential to be involved in unwanted drug-drug interactions due to induction of hepatic clearance pathways. Our mid- and long-term plateable hepatocytes are characterized for drug-metabolizing enzyme activity and tested for response to prototype inducers of CYP1A2, CYP2B6, and CYP3A4. Mid-term and long-term plateable hepatocytes are guaranteed to maintain stable, confluent monolayers from five to nine days or ten to fourteen days, respectively.

Adult High BMI/NAFLD/NASH:

Non-alcoholic fatty liver disease (NAFLD) is the most common chronic liver disease in Western countries with a wide disease

spectrum. It ranges from the hepatic accumulation of lipids known as steatosis, to non-alcoholic steatohepatitis (NASH, steatosis accompanied by inflammation and fibrosis), or to cirrhosis and hepatocellular carcinoma. Because of our unique network of partner institutions, we have access to a broader range of tissues representing both healthy and diseased status. Accordingly, we are able to provide primary hepatocyte lots from tissue with various stages of NAFLD, including steatosis and NASH.



Adult hepatocytes isolated from fatty liver (brightfield optics)

Neonatal/Pediatric/Juvenile:

Developmental changes in the expression of drug metabolism and other clearance mechanisms determine the pharmacokinetics and toxicokinetics of chemicals at different life stages. These differences are critical in regulating the clearance and accumulation of drugs, and thus influence the pharmacodynamic and toxicodynamic responses in newborns and children. Studying these age-related differences is critical for understanding and preventing potential hepatotoxic events. We offer suspension and plateable batches of hepatocytes from liver tissue representing a broad range of life stages, including neonatal, pediatric, and juvenile.

For more information: cells_tissues@lifenethealth.org

LifeNet Health
LifeSciences Division
1864 Concert Drive, Virginia Beach, VA 23453

LifeNet Health and the LifeNet Health logo are registered trademarks of LifeNet Health.
Third party trademarks used herein are the property of their respective owners.
©2021 LifeNet Health. All rights reserved.
68-40-261.01

