Toxicology Assay Solutions

ULC1003 Hepatotoxicity Assay Kit

In vitro Screening of Drug-Induced Hepatotoxicity using upcyte® Hepatocytes

The emergence of liver toxicity is a major reason for the termination of clinical drug trials, as well as the post-market withdrawal of many approved drugs. The use of hepatocytes for early identification of drug candidates that induce acute hepatotoxicity provides a powerful predictive tool that can inform drug development decisions.

UGE1003 Gene Expression Assay Kit

Expression Profiling of Clinically Relevant CYPs Utilizing upcyte® Hepatocytes

It is estimated that CYPs are involved with the metabolism of 70 to 80% of drugs currently on the market. Assessing drug-induced changes in the expression of CYP genes provides a reliable predictive indicator of altered metabolic activities *in vivo*.

Featuring Luminescent upcyte® Hepatocytes

These assays utilize upcyte® hepatocytes, which are human donor-derived hepatocytes established by upcyte technologies GmbH. These cells have the attribute of limited proliferation while maintaining their native levels of constitutive and inducible xenobiotic metabolizing enzymes. Importantly, the induction profiles of cytochrome P450 (CYP) enzyme activities are similar to those of primary hepatocytes. Thus, upcyte® hepatocytes combine the characteristics and advantages of primary hepatocytes with the added practical advantage of having access to the same donor cells for use in iterative, large-scale testing over extended periods.

In Vitro Hepatotoxicity Testing from INDIGO Biosciences

Nuclear receptors are important transcriptional regulators of lipid metabolism in the liver.

INDIGO Biosciences utilizes the upcyte® human hepatocyte system, which is comparable to primary hepatocytes, to examine liver diseases *in vitro*, including steatosis. Data supports the role of these nuclear receptors in affecting gene expression and lipid accumulation in the liver.

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HPGP

Human P-Glycoprotein/MDR1 Drug Interaction Assay

Rapidly Assess Drug Candidates for Drug-Drug Interaction and Drug Safety Assessments

Determining if a drug candidate has incidental activity as either a substrate or an inhibitor of the P-gp transporter is a vital component of the drug safety assessment process. Assessing a drug's potency as an interactor with P-gp, and therefore potential liability for inducing downstream drug-drug interaction is important and mandated by the FDA.

Why Do Labs Choose & Trust INDIGO?

- Largest Portfolio of Nuclear Receptor Assays
- Highly Qualified Technical Support Team
- Clear, Reproducible Results
- Results for Accelerated Decision-Making
- Easy-to-Use, All-Inclusive Assay Kits

In Vitro Platform

Xenobiotic-induced liver injury is a major cause of human morbidity and mortality. A key reason for this problem is our inability to predict hepatotoxicity at the preclinical stage using currently avaliable model systems. Such models include *in vivo* animal models and *in vitro* models based on human-derived liver cells or transformed cell systems. Species differences in xenobiotic disposition and mechanisms of cytotoxicity can make whole animal studies unreliable for extrapolation to humans. In addition, whole animal models are costly and of low throughput. Therefore, it is essential to develop *in vitro* models that are more predictive of hepatotoxicity, particularly those that are based on human or "humanized"component cells.

Additional *in vitro* toxicology and gene expression solutions are available as screening services. Visit our website for more information.

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