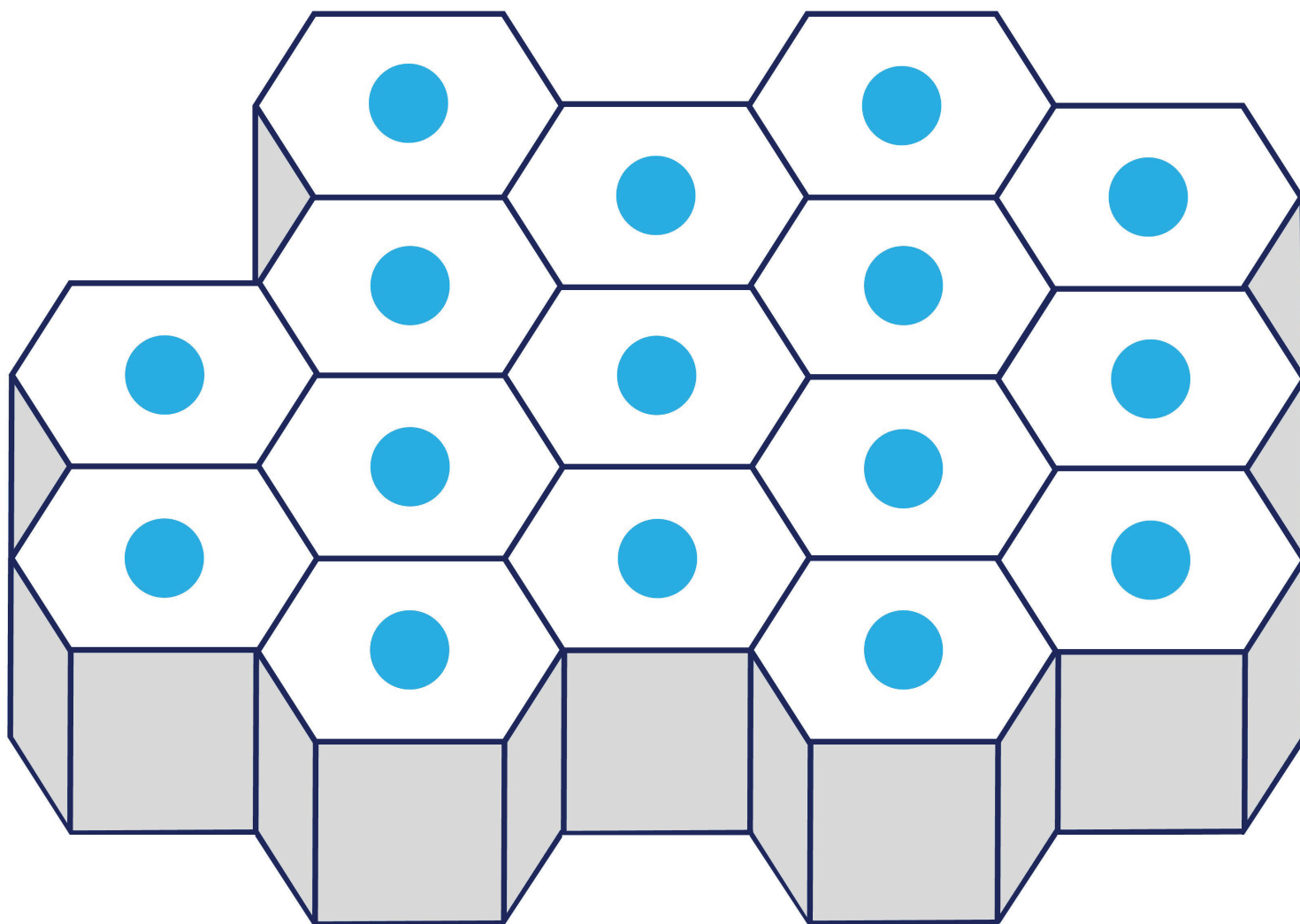


Primary Cell Solutions for ADME and Toxicology Assays



Primary Human Hepatocytes

Primary human hepatocytes are the gold standard for hepatic *in vitro* DMPK and toxicology assays

• Representative

Enable *in vivo* correlations from *in vitro* data to better evaluate a candidate drug's effect on the liver.

• Quality-control

Stringent quality standards and batch acceptance criteria ensures high viability and metabolic parameters.

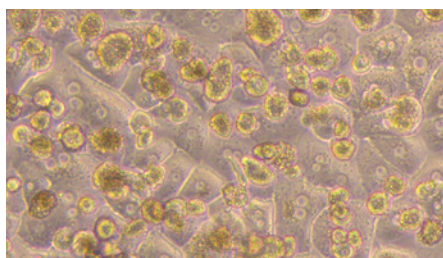
• Characterization

Each vial is supplied with a comprehensive data sheet characterizing the product.

With a full drug metabolism and pharmacokinetics profile, primary human hepatocytes can be utilized to conduct a variety of ADME (absorption, distribution, metabolism, and excretion) and toxicity assays in drug discovery programmes. Cell Guidance Systems offer hepatocyte cells in three grades to maximize their value, dependent on your specific assay requirements. Detailed product QC is provided for each sample.

Plateable Grade

Primary human liver cells of the highest grade for most applications. The only faithful liver model which is validated on Transporter Expression, CYP activity, Drug response and HBV uptake.



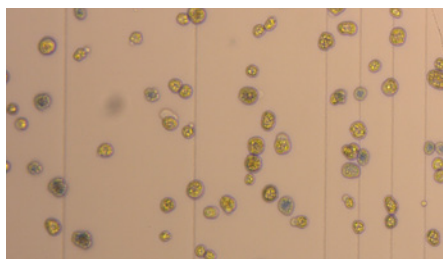
Suitable for a variety of complex assays including:

- Drug-drug interaction assays
- Extended metabolism studies
- Drug influx and efflux studies
- Compound uptake
- HBV/HCV replication assays

- ✓ Viability >85%
- ✓ Formation of a confluent monolayer at 350,000 cells/well (24 well plates) within 24 hours
- ✓ Monolayer survival up to 5 days

Suspension Grade

Primary human liver cells of an intermediate grade. These cells are pooled from ten individuals to increase assay relevance.



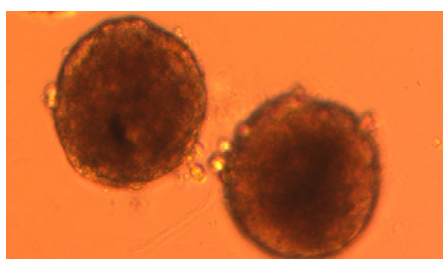
Suitable for a variety of assays including:

- Short-term metabolic studies
- Metabolic route identification
- Metabolite identification assays

- ✓ Viability >80%
- ✓ CYP and Phase II enzyme activity threshold is at least 6 hours before loss of 50%

Spheroid Grade

Primary human liver cells suitable for generating hepatic spheroids for longer term assays.



Suitable for a variety of assays including:

- Hepatotoxicity
- Low clearance compounds
- Metabolism assessment

- ✓ Viability >80%
- ✓ Formation of a dense spheroid within 7-10 days

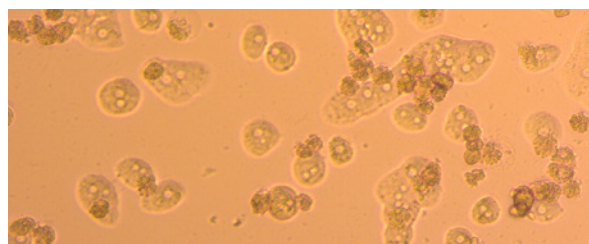
Animal Hepatocytes

Primary suspension hepatocytes from a range of species

Our animal cryopreserved suspension hepatocytes are prepared using the same meticulous isolation and cryopreservation techniques as the human batches. Viabilities for these cells are $\geq 80\%$, ≥ 5 million cells/vial and they are characterized for Phase I and Phase II enzyme activity. Perfect for *in vitro* to *in vivo* correlation experiments.

The following animal hepatocytes are available from Cell Guidance Systems:

- CD1 mouse hepatocytes
- Sprague-Dawley rat hepatocytes
- Beagle dog hepatocytes
- Cynomolgus monkey hepatocytes



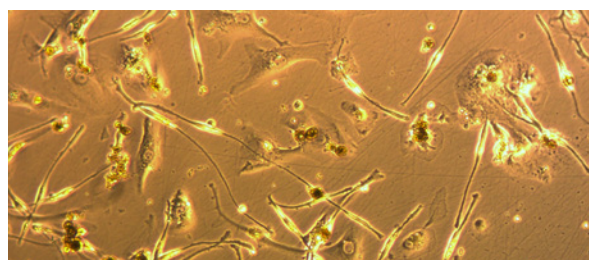
Non-Parenchymal Cells

Hepatocyte co-cultures for *in vitro* hepatotoxicity

Hepatocytes alone are not able to fully represent *in vivo* functionality during toxicology evaluations. Co-cultures are a liver-derived *in vitro* model system that aims to preserve liver-specific morphology and functionality beyond what is provided by pure parenchymal cell cultures.

Co-cultures can be prepared using hepatocytes and non-parenchymal cells (NPC) cultures which, has been evidenced to be one of the most successful models for maintaining functionality *in vitro* when examining drug related hepatotoxicity. Cell Guidance Systems offer NPC characterized for the co-culture with hepatocytes in basement membrane extract overlay.

- ✓ 1 million cells/vial
- ✓ HIV/HBV/HCV negative
- ✓ Microbiologically sterile
- ✓ Qualified for short-term cultures
- ✓ Applications include DMPK evaluations and toxicology assessments
- ✓ Stable for a 1 week long assay



Microsomes

Isolated microsomes for drug metabolism and pharmacokinetic assays

The cytochrome P450 enzyme (CYP) family play a key role in hepatic elimination that occurs in the endoplasmic reticulum. Liver microsomes are the most convenient way to investigate CYP-mediated metabolism. Microsomes are a useful *in vitro* testing system as they contain all CYP enzymes and ensure the CYP kinetic measurements are not confused with other metabolic processes or cellular uptake.

Cell Guidance Systems offer the following microsomes (CYP qualified):

- Human liver microsomes, pooled from 50 donors (balanced gender)
- CD1 mouse liver microsomes, pooled
- Wistar rat liver microsomes, pooled



Cell Guidance Systems' reagents and services enable control, manipulation and monitoring of the cell, both *in vitro* and *in vivo*

Growth Factors

- Recombinant
- PODS® Sustained Release

Exosomes

- Purification
- Detection
- Purified Exosomes
- NTA Service

Cytogenetics Service

- Karyotype Analysis
- Array Hybridization

Defined Surfaces and ECMs

- PeptiGel®
- Matrigen Softwell®
- Matrix Proteins

Other research products

- Primary Human Hepatocytes
- Small Molecules
- Cell Counting Reagent
- Lipid Quantification Assay



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