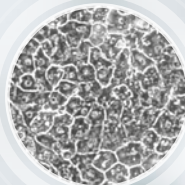
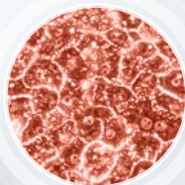


Cellartis® Enhanced hiPS-HEP

Frozen hepatocytes as effective tools for *in vitro*
evaluation of hepatotoxicity and drug metabolism studies



www.cellartis.com

Cellartis® Enhanced hiPS-HEP is a highly homogenous population of human iPS-derived hepatocytes. These cells are ideal for use in drug metabolism and toxicology related applications that demand a highly reproducible platform, continuous supply of material and substantial expression of drug metabolism enzymes.

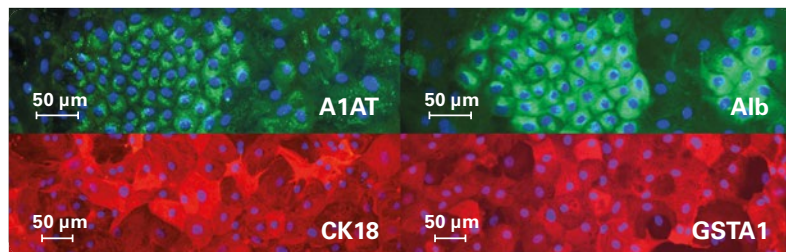


Figure 1: Cryopreserved Cellartis® Enhanced hiPS-HEP express α 1-antitrypsin (A1AT), Albumin (Alb), Cyto-keratin 18 (CK18) and Glutathione S-transferase A1 (GSTA1).

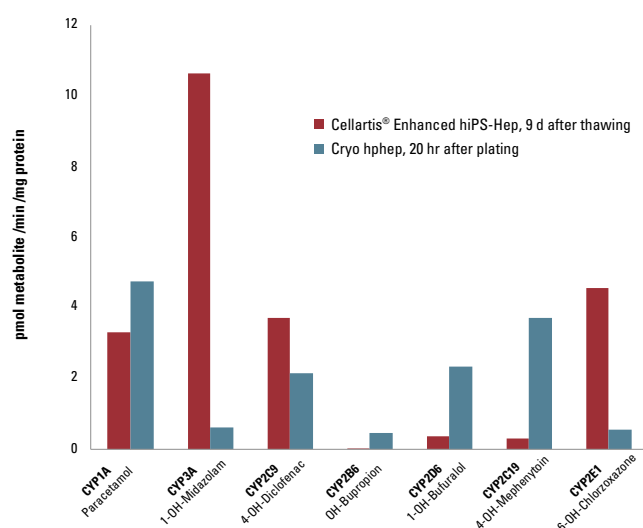


Figure 2: CYP activities of cryopreserved Cellartis® Enhanced hiPS-HEP compared to 4 donors of cryopreserved human primary hepatocytes (hphep)

ADVANTAGES

- Relevant & predictive data
- Human iPS cell derived hepatocytes with substantial expression of drug metabolism enzymes relevant for hepatotoxicity.
- Reproducible data
- Low lot-to-lot variation
- Robust differentiation protocols resulting in highly homogenous population (more than 90 % pure)
- Convenient & flexible formats
- Frozen format
- 2D-cultures

APPLICATIONS

- Toxicity testing
- Drug discovery and metabolism studies
- Vaccine development
- High content analysis

CHARACTERISTIC	ASSAY	ANALYTE
CYP activity	LC/MS	CYP1A (paracetamol), CYP2B6 (OH-bupropion), CYP2C9 (OH-diclofenac), CYP2C19 (OH-mephenytoin), CYP2D6 (OH-bufuralol), CYP2E1 (OH-chlorzoxazone), CYP3A (OH-midazolam)
Protein markers	ICC	α 1-antitrypsin, Albumin, HNF4 α , CK18, GSTA1
Gene expression	qPCR	Phase I, e.g., CYP1A1, 1A2, 2B6, 2C9, 2C19, 2D6, 3A4, 3A5, low 3A7
Gene expression	qPCR	Phase II, e.g., UGT1A1, 2B7, GSTA1.1
Gene expression	qPCR	Transporters, e.g., BSEP, BCRP, MDR-1 (P-gp), MRP2, NTCP, OATP1B1, OCT-1
Gene expression	qPCR	Albumin, α 1-antitrypsin, low AFP
Capability to store	PAS staining	Glycogen

PRODUCT	CATALOGUE #	SOURCE	FORMAT
Frozen Cellartis® Enhanced hiPS-HEP	HEP-104-VIAL-KIT	hiPS cell line 18	1 vial suitable for one 96-well plate

Selected references

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2. Yildirimhan R *et al.* Human embryonic stem cell derived hepatocyte-like cells as a tool for *in vitro* hazard assessment of chemical carcinogenicity. *Toxicol Sci.* 2011 Dec; 124(2): 278-90
3. Mantel N *et al.* Potential markers of attenuation of YF virus after infection of stem cell-derived human hepatocytes with wild-type Asibi or live-attenuated YF 17D virus. *Supplement to the American Journal of Tropical Medicine and Hygiene.* Volume 83, November 2010, Number 5, abstract 12
4. Heins *et al.* *Stem Cells* 2004; 22: 367-376 United States National Stem Cell Bank; <http://www.nationalstemcellbank.org>

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