

Product Characterization Sheet

PHH8008

Human Hepatocytes, Catalog Number 82034



Classification

Plateability	Suspension
Number of days plateable	NA
Confluency	NA
P450 Inducibility	NA
Transporter activity	NA
Number of donors	10

Post-thaw Viability and Yield

Viability	72 %
Yield	5.5 million

Donor Demographics

	Donor 1	Donor 2	Donor 3	Donor 4	Donor 5
Gender	Male	Male	Male	Male	Male
Age	30 years	65 years	49 years	41 years	27 years
Race	Caucasian	Hispanic	Caucasian	African American	Caucasian
Cause of death	Head trauma	Anoxia 2 nd to CVA	CVA 2 nd to ICH	Anoxia	Seizure
BMI	26.9	37.0	29.9	48.8	19.3
Smoking	Yes	No	No	Yes	No
Alcohol	Yes	No	Yes	Yes	No
Substance abuse	Yes	No	No	Yes	No
Medical history	NA	Cardiac disease, renal disease, DM	HTN	HTN, CHF	Cerebral palsy, epilepsy
Infectious diseases	HBV-, HCV-, HIV-, CMV-, EBV (IgG)+	HBV-, HCV-, HIV-, CMV+, EBV (IgG)+	HBV-, HCV-, HIV-, CMV+, EBV (IgG) +	HBV-, HCV-, CMV+, HIV-, EBV (IgG)+	HBV-, HCV-, HIV-, CMV-

	Donor 6	Donor 7	Donor 8	Donor 9	Donor 10
Gender	Female	Female	Female	Female	Female
Age	64 years	69 years	41 years	66 years	62 years
Race	Hispanic	Caucasian	Caucasian	Caucasian	Caucasian
Cause of death	CVA 2 nd to ICH	CVA 2 nd to ICH	CVA 2 nd to ICH	CVA 2 nd to blunt injury	Anoxia
BMI	24.7	28.9	24.5	15.7	22.7
Smoking	No	Yes	Yes	No	No
Alcohol	No	Yes	Yes	Yes	No
Substance abuse	No	No	Yes	No	No
Medical history	MI, HTN, DM, GERD, ESRD, MS	Asthma, cardiac disease, HTN, nephrolithiasis	Asthma, seizures, GERD	Anorexia	NA
Infectious diseases	HBV-, HCV-, HIV-, CMV-, EBV (IgG)+	HBV-, HCV-, HIV-, CMV+, EBV (IgG)+	HBV-, HCV-, HIV-, CMV-, EBV (IgG)+	HBV-, HCV-, HIV-, CMV+, EBV (IgG)+	HBV-, HCV-, HIV-, CMV-, EBV (IgG)+

Characterization: Hepatocytes were thawed using 37°C UCRM™ and centrifuged for 10 minutes at 100g. After removing the supernatant, hepatocytes were re-suspended in 4°C HQM™ and counted for viability and yield using the Trypan Blue exclusion method.

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Drug Metabolism Activity

Drug Metabolizing Enzyme	Substrate (μM)	Incubation Time (minutes)	Metabolite Quantified	Activity (pmol/minute/ million cells)
CYP1A2	Phenacetin (100)	15	Acetaminophen	75.537 \pm 6.011
CYP2A6	Coumarin (50)	30	7-HC, 7-HC-Sulfate, 7-HC-Glucuronide	224.324 \pm 3.296
CYP2A6	Coumarin (50)	30	7-Hydroxycoumarin	52.141 \pm 2.700
CYP2A6	Coumarin (50)	30	7-Hydroxycoumarin Glucuronide	42.264 \pm 0.214
CYP2A6	Coumarin (50)	30	7-Hydroxycoumarin Sulfate	129.920 \pm 0.385
CYP2B6	Bupropion (500)	15	Hydroxybupropion	56.524 \pm 4.032
CYP2C8	Paclitaxel (20)	15	6 α -hydroxypaclitaxel	3.467 \pm 0.551
CYP2C9	Diclofenac (25)	15	4-OH Diclofenac	188.156 \pm 10.357
CYP2C19	S-Mephenytoin (250)	30	4-OH S-Mephenytoin	40.669 \pm 7.377
CYP2D6	Dextromethorphan (15)	15	Dextrophan	10.911 \pm 0.806
CYP2E1	Chlorzoxazone (250)	15	6-OH Chlorzoxazone	119.244 \pm 6.807
CYP3A4-1	Midazolam (20)	10	1-Hydroxymidazolam	62.133 \pm 3.844
CYP3A4-2	Testosterone (200)	15	6 β -hydroxytestosterone	347.542 \pm 70.255
ECOD	7-Ethoxycoumarin (100)	30	7-HC, 7-HC-Sulfate, 7-HC-Glucuronide	92.682 \pm 5.834
ECOD	7-Ethoxycoumarin (100)	30	7-Hydroxycoumarin	23.498 \pm 0.888
ECOD	7-Ethoxycoumarin (100)	30	7-Hydroxycoumarin Glucuronide	45.716 \pm 4.154
ECOD	7-Ethoxycoumarin (100)	30	7-Hydroxycoumarin Sulfate	23.468 \pm 0.888
UGT	7-Hydroxycoumarin (100)	30	7-Hydroxycoumarin Glucuronide	585.959 \pm 125.114
SULT	7-Hydroxycoumarin (100)	30	7-Hydroxycoumarin Sulfate	26.311 \pm 4.234
GST	Acetaminophen (10)	30	Acetaminophen Glutathione	24.200 \pm 2.234
UGT	Acetaminophen (10)	30	Acetaminophen Glucuronide	121.556 \pm 11.042
SULT	Acetaminophen (10)	30	Acetaminophen Sulfate	47.547 \pm 4.404
FMO	Benzylamine HCl (250)	30	Benzylamine-N-Oxide	132.422 \pm 35.032
MAO	Kynuramine HCl (160)	30	4-hydroxyquinoline	477.229 \pm 46.026
AO	Carbazeran HCl (10)	30	4-Hydroxycarbazeran	0.000 \pm 0.003
NAT1	4-Aminobenzoic HCl (200)	30	N-Acetyl-p-aminobenzoic acid	18.800 \pm 3.143

CYP450 Activity Assessment: The hepatocytes were incubated at a cell density of 0.5 million cells/mL in a 48-well plate (125,000 hepatocytes/well) for the designated time durations with isoform-selective substrates. The metabolites were identified and analyzed using LC-MS/MS.

IVAL cell culture media and tissue culture plates used in this evaluation:

- Recovery of thawed hepatocytes - Cat. No. 81015 - UCRM™ Universal Cryopreservation Recovery Media, 50 mL tube
- Suspension and incubation of hepatocytes - Cat. No. 81039/81040 - HQM™ Hepatocyte Incubation Media, 50 mL tube/500 mL bottle

To inquire about our products and services or for technical questions please contact:

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