

An Intestine/Liver Microphysiological System for Drug Pharmacokinetic and Toxicological Assessment

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Materials

Name	Company	Catalog Number	Comments
1x DPBS	Thermo Fisher Scientific	14190235	No calcium, no magnesium
2-OC	TissUse GmbH		Two-organ chip
384-well Spheroid Microplate	Corning	3830	Black/Clear, Round Bottom, Ultra-Low Attachment
4% Paraformaldehyde			Use to fix cell
Acetaminophen	Sigma Aldrich	A7085	Use to MPS assays
Acetonitrile	Tedia		Used to perform HPLC
Alexa Fluor 647 phalloidin	Thermo Fisher Scientific		confocal experiment
Ammonium acetate	Sigma Aldrich		Used to perform HPLC
Caco-2 cells	Sigma Aldrich	86010202	
Cacodylate buffer			
Cell culture flasks	Sarstedt		
Confocal Fluorescence microscope	Leica	DMI6000	
Cryostat	Leica	CM1950	
DMEM high glucose	Thermo Fisher Scientific	12800017	Add supplements: 10% fetal bovine serum, 100 units per mL penicillin, 100 µg/mL streptomycin, and 1% non-essential amino acids
DMSO	Sigma Aldrich	D4540	Add 2% to HepaRG media
Ethanol	Synth		
Fetal Bovine Serum	Thermo Fisher Scientific	12657029	
Freezing medium OCT	Tissue-Tek		Tissue-Tek® O.C.T.™ Compound is a formulation of watersoluble glycols and resins, providing a convenient specimen matrix for cryostat sectioning at temperatures of -10°C and below.

Hematoxylin & Eosin			
HepaRG cells	Biopredic International	HPR101	Undifferentiated cells
HHSTeC	ScienCell Research Laboratories	5300	Cells and all culture supplements
Hoechst 33342			HCA experiments
HT-29 cells	Sigma Aldrich	85061109	
Human Insulin	Invitrogen - Thermo Fisher Scientific	12585014	
Hydrocortisone	Sigma Aldrich	H0888	
Isopropanol	Merck	278475	
Karnovsky's fixative			
L-glutamine	Thermo Fisher Scientific	A2916801	
Luna C18 guard column SS	Phenomenex		Used to perform HPLC
Microscope	Leica	DMi4000	
Microtome	Leica	RM2245	
Millicell 0.4 µm pore size inserts	Merck	PIHP01250	
Millicell ERS-2 meter	Merck	MERS00002	Used to TEER measurement
MitoTracker Deep Red			HCA experiments
MTT	Thermo Fisher Scientific	M6494	
MX3000P system	Agilent Technologies		
Neubauer chamber			Counting cells
Operetta High Content Imaging System	Perkin Elmer		Used to perform HCA
P450-Glo CYP3A4 Assay with Luciferin-IPA	Promega	Cat.# V9001	
Penicillin/Streptomycin	Thermo Fisher Scientific	15070063	Cell culture
Permount	Thermo Fisher Scientific		Histology
Primers			RT-qPCR
PVDF membrane	BioRad		
PVDF Syringe filter			0.22 µm pore size
Reversed-phase Luna C18 column	Phenomenex		Used to perform HPLC
Shaker (IKA VXR Basic Vibrax)	IKA Works GmbH & Co	2819000	Used for spheroids to improve MTT assay
Stellate Cell Media (STeC CM)	ScienCell	5301	Add STeC CM supplements
SuperScriptITM Reverse Transcriptase	Thermo Fisher Scientific		
SYBR Green PCR Master Mix	Thermo Fisher Scientific		
TRizol TM reagent	Thermo Fisher Scientific		Trizol is a monophasic solution of phenol and guanidine isothiocyanate.
Trypsin/EDTA solution	Thermo Fisher Scientific	R001100	
Ultra-low-attachment plates	Corning	CLS3471-24EA	6 wells
Vectashield plus DAPI mounting media			
White Opaque 96-well Microplate	PerkinHelmer		
Wide-bore tips			
Williams E	Pan Biotech	P04-29510	Add supplements: 10% fetal bovine serum, 2 mM L-glutamine, 100 units per ml penicillin, 100 µg/mL streptomycin and 5 µg/mL human insulin