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For Falcon® branded products, see the **Falcon Product Selection Guide** (CLS-F-PSG-001).

For Axygen® branded products, see the **Axygen Selection Guide** (CLS-A-PSG-001).

For Gosselin™ branded products, see the **Gosselin General Catalog** (CLS-G-GEN CAT-002).

For PYREX® branded reusable Glass products, see the **PYREX and Corning Glass and Reusable Plastic Product Selection Guide** (CLS-GL-001).

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Ordering and Customer Service Contact Information

Corning® ADME/Tox Products:

Customer Service

tel: +31 (0) 20 659 60 51

fax: +31 (0) 20 659 76 73

email: CSEurope@corning.com

Scientific Support

email: ScientificSupportEMEA@corning.com

Contact your local distributor or visit

www.corning.com/lifesciences to locate your nearest Corning office.

Corning GentestSM Contract Research Services

To discuss and order Corning Gentest Contract Research Services, contact Corning Life Sciences at:

email: ScientificSupportEMEA@corning.com

Shipment of Corning Gentest LLC-PK₁ control and P-gp expressing cell lines requires receipt by Corning Life Sciences of an executed USE AGREEMENT (non-commercial use by non-profit organizations only) or an executed LICENSE AGREEMENT. Contact a Technical Support Representative or your local Sales Representative for more information regarding these agreements.

Terms and Prices

Manufacturers' terms and conditions for direct orders:

- ▶ No minimum order required
- ▶ Confirmation of shipping made at time of order
- ▶ Written confirmation required only for standing, blanket, or change orders
- ▶ Payment terms are net 30 days
- ▶ Payment remittances should be sent to the address printed on the invoice
- ▶ Freight terms are DDP destination
- ▶ Charges for freight, handling, wet/dry ice, and packaging will be added to invoice as a separate item
- ▶ Taxes imposed on the sale of any product will be added to the price quoted
- ▶ Prices are subject to change without prior notification

Online Shopping

Visit www.corning.com/lifesciences and open an account to order products online.

Delivery and Product Satisfaction on Direct Orders

- ▶ Products will be replaced at no cost, if the product does not conform to the accompanying analytical data report.
- ▶ Products will be replaced at no cost, if shipment is incomplete or damaged. Report incomplete shipments within 5 days, damaged shipments within 48 hours.
- ▶ Returned goods authorization (RGA) number, assigned by a Customer Service Representative, is required prior to all product returns.
- ▶ Appropriate shipping documents, cartons, and packing materials are required for all product returns.
- ▶ No product may be returned for credit or replacement after 20 days.

HepatoLink



HepatoLink® is the Corning Life Sciences immediate response system providing researchers with instant notification when Corning Gentest hepatocyte products are available. For your convenience, select a preferred contact method—email, phone, and/or SMS text alerts. Upon registration, you will be sent donor characterization data when a new lot becomes available. You can register online at www.corning.com/lifesciences/hepatolink. Place your order directly through Corning's online system. If you have any questions regarding Corning's program or your participation, please contact us at 978.442.2200 or email hepatocytes@corning.com.

All Corning Gentest fresh and cryohepatocyte orders must be lot specific. Each lot number corresponds with a specific donor and must be included with your order. An up-to-date listing of Corning Gentest human fresh and cryohepatocyte donors with donor demographics, donor history, and characterization data is maintained at www.corning.com/lifesciences/admetox.

Use of Genetically Modified Microorganisms (GMMO)

Information for European Customers: Corning immortalized hepatocytes, Corning Supersomes™ enzymes, Corning TransportoCells™ products, or other products considered genetically modified microorganisms as described in Corning Life Sciences technical literature. As a condition of sale, use of these products must be in accordance with all applicable local guidelines on the contained use of genetically modified microorganisms, including the Directive 2009/41/EC of the European Parliament and of the Council.

Absorption/Transport

CELL CULTURE AND MULTIWELL FILTER PERMEABLE SUPPORT SYSTEMS

Corning® Gentest™ Pre-coated PAMPA Plate System



Cat. No.	Description	Qty/Cs
353015	Corning Gentest PAMPA 96-well pre-coated filter plate, individually packaged with a 96-well microassay receiver plate	5

Other Products – Cell Culture and Multiwell Filter Permeable Support Systems

- ▶ Corning BioCoat™ HTS Caco-2 assay system
- ▶ Corning BioCoat Fibrillar Collagen 24-Multiwell permeable support system
- ▶ HTS Transwell® 24-well permeable support systems
- ▶ Falcon® 24-Multiwell permeable support systems
- ▶ Companion products for Falcon 24-Multiwell permeable support systems
- ▶ HTS Transwell 96-well permeable support systems
- ▶ Falcon 96-Multiwell permeable support systems
- ▶ Companion products for Falcon 96-Multiwell permeable support systems
- ▶ Transwell individual cell culture permeable supports
- ▶ Falcon individual cell culture permeable supports

For more information on Corning cell culture and Transwell® permeable support inserts, see the **Cell Culture** section of this catalog or the **Permeable Supports Selection Guide** (CLS-CC-027).

For more information on Falcon® cell culture and Multiwell filter permeable support inserts, see the **Falcon Product Selection Guide** (CLS-F-PSG-001) or the **Permeable Supports Selection Guide** (CLS-CC-027).

ABC AND SLC TRANSPORTER MODEL SYSTEMS

Corning offers a range of products and assay solutions for the assessment of absorption properties and transporter studies.



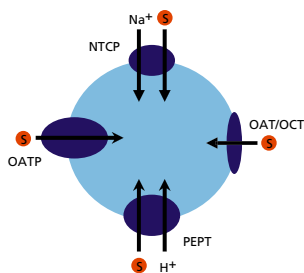
Corning® Gentest™ transporter products are *in vitro* models designed for use in drug transport studies, and include ATP Binding Cassette (ABC) transporter membranes, ABC transporter inside-out vesicles, and SLC transporter expressing cells. These recombinant products are designed for high throughput screening use in ADME studies. Corning also offers transporter-qualified primary hepatocytes that can be used in suspension or monolayer assays. These native cells models provide a more accurate prediction of *in vivo* activity than most standard recombinant models.

Corning TransportoCells™ Cryopreserved SLC Transporter Cells

Corning SLC TransportoCells products are high performance mammalian cells transiently over-expressing a single human SLC transporter protein. They are ideal cell-based models for studying transporter activities in reaction phenotyping, drug-drug interaction and drug clearance studies

- ▶ Cryopreserved, single-use HEK-293 cells expressing a single transporter
- ▶ High and robust signal-to-noise ratio (S:N ≥10)
- ▶ Direct measurement of transporter-mediated drug uptake
- ▶ Cells can be thawed, plated, and assayed in just 24 hours
- ▶ Use in drug uptake assays for radiolabeled or non-radiolabeled compounds





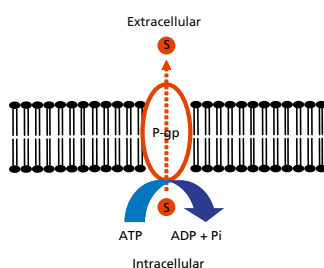
Corning® TransportoCells™ Cryopreserved SLC Transporter Cells (Continued)

Cat. No.	Transporter	No. Cells/Vial	Qty
354859	OATP1B1*1a/SLCO1B1*1a	≥10 million cells	1
354851	OATP1B3/SLCO1B3	≥10 million cells	1
354857	OAT1/SLC22A6	≥10 million cells	1
354858	OAT3/SLC22A8	≥10 million cells	1
354852	OCT1/SLC22A1	≥10 million cells	1
354853	OCT2/SLC22A2	≥10 million cells	1
354860	PEPT1/SLC15A1	≥10 million cells	1
354861	PEPT2/SLC15A2	≥10 million cells	1
354862	OATP2B1/SLCO2B1	≥10 million cells	1
354863	OATP1A2/SLCO1A2	≥10 million cells	1
354864	NTCP/SLC10A1	≥10 million cells	1
354855	MATE1/SLC47A1	≥10 million cells	1
354856	MATE2-K/SLC47A2	≥10 million cells	1
354854	Control	≥10 million cells	1

Corning Gentest™ ABC Transporter Membranes

Corning Gentest ABC transporter membrane products are easy-to-use, high throughput models for rapid screening of compounds in drug discovery. They are ideal for use in pre-screening assays to measure a drug candidate's ability to stimulate or inhibit P-gp, MRP, and BCRP ATPase activity.

- ▶ Prepared from recombinant baculovirus-infected insect cells
- ▶ Measurement of drug-stimulated vanadate-sensitive ATPase activity
- ▶ Assay developed for non-radiolabeled compounds



Cat. No.	Transporter	Protein Concentration (mg/mL)	Qty (mL)
453228	Human P-gp (MDR1)	5	0.5
453440	Rat P-gp (Mdr1a)	5	0.5
453434	Rat P-gp (Mdr1b)	5	0.5
453232	Mouse P-gp (Mdr1a)	5	0.5
453250	Mouse P-gp (Mdr1b)	5	0.5
453230	Cynomolgus Monkey P-gp (Mdr1)	5	0.5
453231	Rhesus Monkey P-gp (Mdr1)	5	0.5
453229	Beagle Dog P-gp (Mdr1)	5	0.5
453456	Human MRP1	5	0.5
453332	Human MRP2	5	0.5
453333	Human MRP3	5	0.5
453340	Rat Mrp1	5	0.5
453334	Rat Mrp2	5	0.5
453270	Human BCRP (Arg482)	5	0.5
453257	Human BCRP (Thr482)	5	0.5
453457	Rat Bcrp	5	0.5
453251	Mouse Bcrp	5	0.5
453200	Control membrane preparation for ABC transporters (negative control)	5	0.5

Arg = Arginine, Thr = Threonine.



Corning® Gentest™ ABC Transporter Vesicles

Corning Gentest ABC transporter inside-out vesicles are used in *in vitro* direct uptake assays to evaluate whether a drug candidate is a substrate or inhibitor for transporters. This information can help to predict the interactions between drug compounds and efflux transporters. ABC transporter vesicles are an ideal transporter model over cell-based assays for compounds unable to penetrate the plasma membrane by simple diffusion.

- ▶ Prepared from recombinant baculovirus-infected insect cells
- ▶ Direct measurement of transporter-mediated drug uptake
- ▶ Use in drug uptake assays for radiolabeled or non-radiolabeled compounds

Corning also offers transporter vesicle kits to use with the vesicle products. The kits contain all necessary buffers and chemicals for performing 200 assays, providing convenience and reducing the time needed for reagent preparation.

Cat. No.	Transporter	Protein Concentration (mg/mL)	Qty (mL)
453455	Human MRP1	5	0.5
453450	Human MRP2	5	0.5
453520	Human MRP3	5	0.5
453510	Rat Mrp1	5	0.5
453523	Rat Mrp2	5	0.5
453501	Rat Bsep	5	0.5
453502	Human BSEP	5	0.5
453271	Human BCRP (Arg482)	5	0.5
453345	Rat Bcrp	5	0.5
453252	Mouse Bcrp	5	0.5
453500	Control vesicle (negative control)	5	0.5

Arg = Arginine.

Corning Gentest Transporter Kits

Corning transporter membrane and vesicle kits provide convenience and reduce the time needed for reagent preparation. The ATPase kit contains all necessary buffers and chemicals for performing five 96-well plate assays. The BSEP and BCRP/MRP kits contain all necessary buffers and chemicals for performing 200 assays. However, these kits do not include vesical or membrane preps.



Cat. No.	Description	Qty
459006	Corning Gentest ATPase assay kit Kit contains reagents for five 96 well plate assays (assay buffer, 10 mM phosphate standard, 50 mM ATP, 10 mM sodium, orthovanadate, assay stop solution, reducing agent, color solution A, color solution B, 1 mM verapamil, 1 M N-ethylmaleimide, 1 M GSH, 100 mM probenecid, 25 mM benzbromarone, 1 mM sulfasalazine).	1 kit
459010	Corning Gentest MRP/BCRP vesicle assay kit Kit contains reagents for 200 assays (assay uptake buffer, 10X wash buffer, 200 mM ATP, 200 mM AMP, 300mM GSH, MRP3 substrate, BCRP substrate, MRP2/MRP3 fluorescent substrate, MRP1/MRP2 substrate).	1 kit
459011	Corning Gentest BSEP Vesicle Assay Kit Kit contains reagents for 200 assays (assay uptake buffer, 10X wash Buffer, 200 mM ATP, 200 mM AMP, BSEP substrate, blocking buffer [50X]).	1 kit



Corning® Gentest™ Transporter-qualified Human CryoHepatocytes

Corning Gentest transporter-qualified human cryopreserved hepatocytes are ideal for *in vivo*-like screening of drug compounds for hepatic transporter uptake activity, as well as for investigating transporter involved drug-drug interaction. Every lot is extensively tested, pre-qualified for transporter activity using 3H-Estrone-3-sulfate, 3H-TCA, and 3C-TEA as probe substrates for hOATP, hNTCP, and hOCT1, respectively. These hepatocytes can also be used in metabolic stability and drug clearance studies.

For SLC transporter-specific characterization, such as evaluating a drug candidate's affinity to a specific SLC transporter, follow up your testing with Corning SLC TransportoCells™ products.

To view an up-to-date listing of Corning Gentest transporter-qualified human cryopreserved hepatocyte donors with donor demographics, donor history, and characterization data, contact ScientificSupport@corning.com.

Cat. No.	Description	Cells/Vial	Qty/Pk
454541	Corning Gentest plateable transporter-qualified human cryohepatocytes	≥5 million cells	1.5 mL
454426	Corning Gentest SLC transporter-qualified human cryohepatocytes in suspension	2-5 million cells	1.5 mL
454427	Corning Gentest SLC transporter-qualified human cryohepatocytes in suspension	≥5 million cells	1.5 mL
454460	Corning Gentest hepatocyte transporter suspension assay kit Kit contains a detailed transporter uptake protocol, 10 mL of filtration oil, and 100 easy-to-cut centrifuge tubes.	1 kit	100 tests

Corning® Gentest™ LLC-PK₁ Control and P-gp Expressing Cells

Corning Gentest transfected P-gp cDNA-expressing cell lines are prepared from a clonal population derived from the LLC-PK1 cell line. The LLC-PK1 model containing the P-gp expressing cells and the control cells provides a robust model to determine P-gp-specific transport of a substrate. LLC-PK1 cells are morphologically and functionally similar to intestinal barrier cells, with measurement of drug apparent permeability (P_{app}) through cell monolayers being well correlated with human intestinal absorption.

Typical Applications

- ▶ Screening assays for P_{app}, P-gp-mediated transport, and P-gp inhibition
- ▶ Characterizing the interaction of a drug with P-gp for concentration-dependent efflux and inhibition of P-gp (IC₅₀)
- ▶ Assess potential transporter-mediated drug-drug interactions

Shipment of Corning Gentest LLC-PK1 Control and P-gp expressing cell lines requires receipt by Corning Life Sciences of an executed USE AGREEMENT (non-commercial use by non-profit organizations only) or an executed LICENSE AGREEMENT. Contact a Scientific Support Representative at 800.492.1110 or your local Account Manager for more information regarding these agreements.

Note: Cell lines are not available for purchase online.

Cat. No.	Description	Qty
450211	LLC-PK ₁ expressing MDR1 cDNA cell line	1
450216	LLC-PK ₁ control cell line (contains same vector and promoter used in Cat. No. 450211)	1

CHEMICALS FOR MEASURING TRANSPORTER ACTIVITY

CLF is a fluorescein-labeled bile acid with biological behavior closely resembling naturally occurring choly glycine. CLF is secreted into bile canaliculi by the bile salt export pump (BSEP) transporter.

Cat. No.	Description	Qty/Pk
451041	CLF (Choly-lysyl-fluorescein)	1 mg

Metabolism

RECOMBINANT METABOLIC ENZYMES, COFACTORS, AND BUFFERS

Corning® Supersomes™ Enzymes are recombinant enzyme products and recognized worldwide as the industry gold standard. These enzymes are prepared from baculovirus-transfected insect cells with very high levels of catalytic activities (typically 6-fold higher than an average HLM sample). This is ideal for screening high throughput drug interactions, studying slowly metabolized chemicals, or manufacturing large-scale production of metabolites for structural identification.

Corning offers more than 40 different human and animal P450 isoforms, many with or without NADPH reductase. Additionally, Corning offers wide range of non-P450 metabolic enzymes, including UDP-glucuronosyl transferases (UGTs), flavin-containing monooxygenases (FMOs), monoamine oxidases (MAOs), soluble N-Acetyltransferases (NATs), and carboxylesterases (CEs). For many of the recombinant enzyme products, side-by-side comparisons of the catalytic activity with pooled human liver microsomes (HLMs) have been performed and the data are available by email ScientificSupportEMEA@corning.com.

Key Benefits

- ▶ Wide-range selection of high quality metabolism enzymes
- ▶ Higher catalytic activities than the native enzymes from human liver and other organs, with comparable K_m
- ▶ Accepted industry gold standard recombinant enzyme system, with large number of peer-reviewed publications
- ▶ Preferred enzymes for generating data to use with the Simcyp computational model
- ▶ Supports essential assays such as reaction phenotyping, metabolic stability, and enzyme inhibition required for FDA new drug registration and other pharmacokinetic studies that are appropriate for evaluating pro-drugs and CYP or non-CYP pathways of elimination.

Corning Supersomes Metabolic Enzymes

Human P450 Enzymes

Cat. No.	Description	P450 Content (nmol)	Qty (mL)
456211	Human CYP1A1 + reductase	0.5	0.5
456203	Human CYP1A2 + reductase	0.5	0.5
456220	Human CYP1B1 + reductase	0.5	0.5
456204	Human CYP2A6 + reductase	1	0.5
456254	Human CYP2A6 + reductase + b_5	0.5	0.5
456210	Human CYP2B6 + reductase	0.5	0.5
456255	Human CYP2B6 + reductase + b_5	0.5	0.5
456222	Human CYP2C18 + reductase	0.5	0.5
456219	Human CYP2C19 + reductase	0.5	0.5
456259	Human CYP2C19 + reductase + b_5	0.5	0.5
456212	Human CYP2C8 + reductase	1	0.5
456252	Human CYP2C8 + reductase + b_5	0.5	0.5
456218	Human CYP2C9*1 (Arg ₁₄₄) + reductase	1	0.5
456258	Human CYP2C9*1 (Arg ₁₄₄) + reductase + b_5	0.5	0.5
456209	Human CYP2C9*2 (Cys144) + reductase allelic variant	1	0.5
456242	Human CYP2C9*3 (Leu359) + reductase allelic variant	1	0.5
456217	Human CYP2D6*1 (Val ₃₇₄) + reductase	0.5	0.5
456206	Human CYP2E1 + reductase + b_5	1	0.5
456264	Human CYP2J2 + reductase + b_5	0.5	0.5
456207	Human CYP3A4 + reductase	1	0.5
456202	Human CYP3A4 + reductase + b_5	0.5	0.5
456235	Human CYP3A5 + reductase	1	0.5
456256	Human CYP3A5 + reductase + b_5	0.5	0.5



Human P450 Enzymes (Continued)

Cat. No.	Description	P450 Content (nmol)	Qty (mL)
456237	Human CYP3A7 + reductase + b ₅	0.5	0.5
456221	Human CYP4A11 + reductase	0.5	0.5
456272	Human CYP4F2 + reductase + b ₅	0.5	0.5
456273	Human CYP4F3A + reductase + b ₅	0.25	0.5
456274	Human CYP4F3B + reductase + b ₅	0.5	0.5
456275	Human CYP4F12 + reductase + b ₅	0.5	0.5
456260	Human CYP19 (aromatase) + reductase	0.5	0.5

Human UGT Enzymes

Cat. No.	Description	Protein Concentration (mg/mL)	Qty (mL)
456400	UGT control microsomes	5	0.5
456411	Human UGT 1A1	5	0.5
456413	Human UGT 1A3	5	0.5
456414	Human UGT 1A4	5	0.5
456416	Human UGT 1A6	5	0.5
456407	Human UGT 1A7	5	0.5
456418	Human UGT 1A8	5	0.5
456419	Human UGT 1A9	5	0.5
456410	Human UGT 1A10	5	0.5
456424	Human UGT 2B4	5	0.5
456427	Human UGT 2B7	5	0.5
453323	Human UGT 2B10	5	0.5
456435	Human UGT 2B15	5	0.5
456437	Human UGT 2B17	5	0.5

UGT = UDP-glucuronosyl transferases

Other Human Metabolic Enzymes

453320	Human CES1b	5	0.5
453321	Human CES1c	5	0.5
453322	Human CES2	5	0.5
456241	Human FMO1	5	0.5
456233	Human FMO3	5	0.5
456245	Human FMO5	5	0.5
456280	Monoamine Oxidase (MAO) Control	5	0.5
456283	Human Monoamine Oxidase A (MAO-A)	5	0.5
456284	Human Monoamine Oxidase B (MAO-B)	5	0.5
456199	Insect cell Cytosol (for use with all NAT Corning® Supersomes™ enzymes)	2.5	0.5
456281	Human NAT1 Cytosol	2.5	0.5
456282	Human NAT2 Cytosol	2.5	0.5

FMO = Flavin-containing monooxygenase, NAT = N-acetyltransferases.

Rat P450 Enzymes

Cat. No.	Description	P450 Content (nmol)	Qty (mL)
456514	Rat P450 reductase control baculovirus-insert cell-expressed (BTI-TN-5B1-4 cells)	0.5 mL	0.5
456511	Rat CYP1A1 + reductase	1.0 nmol	0.5
456503	Rat CYP1A2 + reductase	0.5 nmol	0.5
456519	Rat CYP2A1 + reductase + b ₅	0.5 nmol	0.5
456505	Rat CYP2A2 + reductase + b ₅	0.5 nmol	0.5
456510	Rat CYP2B1 + reductase + b ₅	0.5 nmol	0.5
456536	Rat CYP2C6 + reductase + b ₅	0.5 nmol	0.5
456531	Rat CYP2C11 + reductase + b ₅	0.5 nmol	0.5
456532	Rat CYP2C12 + reductase + b ₅	0.5 nmol	0.5
456533	Rat CYP2C13 + reductase + b ₅	0.5 nmol	0.5
456517	Rat CYP2D1 + reductase	0.5 nmol	0.5
456513	Rat CYP2D2 + reductase	0.5 nmol	0.5
456521	Rat CYP2E1 + reductase + b ₅	0.5 nmol	0.5
456501	Rat CYP3A1 + reductase + b ₅	0.5 nmol	0.5
456502	Rat CYP3A2 + reductase + b ₅	0.5 nmol	0.5

Dog P450 Enzymes

456621	Dog CYP2C21+ reductase + b ₅	0.5 nmol	0.5
456612	Dog CYP3A12 + reductase + b ₅	0.5 nmol	0.5

Controls, Cofactors, and Buffers**Enzyme Controls**

Analysis of cytochrome P450 form specific metabolism requires use of the appropriate control preparation in order to eliminate the possibility of metabolism by enzymes native to the cell lines. Corning Life Sciences prepares control microsomes and cytosols using procedures identical to those used to prepare other microsomal products.

For P450 enzymes, control microsomes are available from both Sf9 and High Five (Hi5 or BTI-TN-5B1-4) insect cell preparations. All insect cell control microsomes are prepared from insect cells infected with wild-type baculovirus. Control preparations are also available for UGT, MAO, NAT, and CES Corning® Supersomes™ enzymes products.

Normalization of Protein Concentration

Differences in total protein concentration can affect the free concentration of substrate and hence enzyme kinetics. The available substrate concentration may be significantly lower than initially assumed for those substrates which have a large potential to bind nonspecifically to protein (J. Pharmacol. Exp. Ther. 283:46 [1997]; Drug Metab. Dispos. 25:1359 [1997]). Total protein concentration can be controlled and normalized in each incubation by the addition of control microsomes.

NADPH Regenerating System

NADPH is a necessary cofactor in many xenobiotic metabolism reactions. NADPH is required for the measurement of oxidase activity catalyzed by P450s, FMOs, NADPH-P450 OR, and many other oxidase enzymes. A common source of NADPH in an oxidase enzyme assay is an NADPH regenerating system which generates NADPH *in situ* using an enzymatic reaction. For example, glucose-6-phosphate dehydrogenase (G6PDH) will convert NADP⁺ to NADPH in the presence of the substrate glucose-6-phosphate (Glc-6-PO₄).

The Corning Gentest™ NADPH regenerating system consists of two reagents, Solution A (NADP⁺ and Glc-6-PO₄) and Solution B (G6PDH). Each reagent is sold separately. Combined, these two reagents form a NADPH regenerating system that can be used for all NADPH requiring oxidase assays (cDNA-expressed enzymes and liver fractions). At least 200 to 400 enzyme assays can be performed using one vial each of Solution A and B. The total number of assays that can be performed is dependent on a researcher's experimental design.

Corning® Supersomes™ Enzymes Controls

Cat. No.	Description	Protein Concentration (mg/mL)	Qty (mL)
456200	Insect cell control for Corning Supersomes enzymes baculovirus-insect cell-expressed (BTI-TN-5B1-4 cells)	5	1.5
456201	Insect cell control for Corning Supersomes enzymes baculovirus-insect cell-expressed (BTI-TN-5B1-4 cells)	5	0.5
456199	Insect cell cytosol control	2.5	0.5
456299	Sf9 insect control for Corning Supersomes enzymes baculovirus-insect cell-expressed	5	0.5
456400	Human UGT Insect Control for Corning Supersomes enzymes	5	0.5
456280	MAO Insect Control for Corning Supersomes enzymes	5	0.5
456244	Human P450 reductase and b ₅ control for baculovirus expressed (BTI-TN-5B1-4 cells)	5	0.5
456514	Rat P450 reductase control for baculovirus-insect cell-expressed (BTI-TN-5B1-4 cells)	5	0.5

Cofactors

Cat. No.	Description	Qty (mL)
451220	NADPH Regenerating system – Solution A (NADP ⁺ and Glc-6-PO ₄)	5
451200	NADPH Regenerating system – Solution B (G6PDH)	1
451300	UGT Reaction mix – Solution A	2
451320	UGT Reaction mix – Solution B	5

Buffers

451201	Phosphate buffer (pH 7.4)	500
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HTS P450 INHIBITION KITS

Corning® Gentest™ Human P450 Inhibition Screening Kits

Microplate-based, fluorometric assays for the activities of important P450 drug metabolizing enzymes have been developed by Corning, including CYP1A2, 2C9, 2C19, 2D6, 3A4, and others, and applied to inhibition analysis. The IC_{50} or percent inhibition at a given substrate concentration can be calculated and used as a basis for comparison among a series of tested compounds.

Corning Gentest P450 high throughput screening kits are designed to rapidly screen for potential inhibitors of cytochrome P450 catalytic activity. Each kit provides all the necessary components and instructions for measuring the IC_{50} value for up to 38 test compounds in 96-well plates. These kits can accommodate other plate formats, e.g., 384-well and 1536-well, with proper scaling.

Each Corning Gentest P450 inhibition screening kit includes the following components:

- ▶ Corning Supersomes™ enzymes (recombinant human P450)
- ▶ Fluorescent P450 substrate
- ▶ Positive control inhibitor
- ▶ Metabolite standard
- ▶ NADPH regenerating system
- ▶ Reaction buffer
- ▶ Stop buffer
- ▶ Control membrane protein
- ▶ Instruction manual

Stability

Corning Gentest P450 inhibition screening kits have been tested through 10 freeze-thaw cycles without a change in IC_{50} values for the included substrates or a significant low in signal-to-noise ratios.

Cat. No.	P450 Enzyme	Substrate	Positive Control Inhibitor	Fluorescent Standard	Qty*
459500	CYP1A2	CEC	Furafylline	CHC	1 kit
459420	CYP2A6	Coumarin	Trancyclopromine	7-HC	1 kit
459220	CYP2B6	EFC	Trancyclopromine	HFC	1 kit
459320	CYP2C8	DBF	Quercetin	Fluorescein	1 kit
459300	CYP2C9	MFC	Sulfaphenazole	HFC	1 kit
459400	CYP2C19	CEC	Trancyclopromine	CHC	1 kit
459200	CYP2D6	AMMC	Quinidine	AHMC	1 kit
459100	CYP3A4	BFC	Ketoconazole	HFC	1 kit
459110	CYP3A4	BQ	Ketoconazole	7-HQ	1 kit
459120	CYP3A4	DBF	Ketoconazole	Fluorescein	1 kit
459520	CYP19	MFC	Ketoconazole	HFC	1 kit

*Please inquire about bulk packaging.

BFC = 7-benzyloxy-4-trifluoromethylcoumarin, EFC = 7-ethoxy-4-trifluoromethylcoumarin, BQ = 7-benzyloxyquinoline, DBF = dibenzylfluorescein, AMMC = 3-[2-(N,N-diethyl-N-methylamino)ethyl]-7-methoxy-4-methylcoumarin, CEC = 7-ethoxy-3-cyanocoumarin, MFC = 7-methoxy-4-trifluoromethylcoumarin, HFC = 7-hydroxy-4-trifluoromethylcoumarin, CHC = 3-cyano-7-hydroxycoumarin, AHMC = 3-[2-(N,N-diethyl-N-methylamino)ethyl]-7-hydroxy-4-methylcoumarin, 7-HC = 7-hydroxycoumarin.



CHEMICAL SUBSTRATES, INHIBITORS, METABOLITE STANDARDS, AND SOLUTIONS

Corning® Gentest™ chemicals are high quality products and are validated in ADME applications with Corning Supersomes™ enzymes, tissue fractions, and primary hepatocytes.

Stable Isotope Standards for use with Mass Spectrometry

Cat. No.	Description	CAS#	CYP/UGT Application	Qty (mg)
451001	Acetamidophenol-[13C2,15N]	103-90-2	Internal metabolite standard CYP1A2	1
451002	7-Hydroxycoumarin-[D5]	93-35-6	Internal metabolite standard CYP2A6	1
451003	Hydroxybupropion-[D6]	N/A	Internal metabolite Standard CYP2B6	1
451004	Desethylamodiaquine-[D3]	79352-78-6	Internal metabolite standard CYP2C8	1
451048	6 α -Hydroxyapclitaxel-[D5]	153212-75-0	Internal metabolite standard CYP2C8	1
451005	Hydroxytolbutamide-[D9]	5719-85-7	Internal metabolite standard CYP2C9	1
451006	4-Hydroxydiclofenac-[13C6]	64118-84-9	Internal metabolite standard CYP2C9	1
451007	4-Hydroxymephenytoin-[D3]	61837-65-8	Internal metabolite standard CYP2C19	1
451008	Dextrophan-[D3]	25-73-5	Internal metabolite standard CYP2D6	1
451040	1-Hydroxybufuralol Maleate-[D9]	57704-16-2	Internal metabolite standard CYP2D6	1
451011	Oxidized Nifedipine-[D12]	67035-22-7	Internal metabolite standard CYP3A4	1
451009	6 β -Hydroxytestosterone-[D7]	62-99-7	Internal metabolite standard CYP3A4	1
451046	Acetaminophen-glucuronide-[D3]	120595-80-4	Internal metabolite standard UGT1A1, UGT1A6, UGT1A9	1

Fluorescent-labeled Substrates, Metabolites, and Inhibitors

Cat. No.	Description	CAS#	CYP/MFC/BFC/BQ Application	Qty (mg)
451015	3-Cyano-7-hydroxycoumarin (CHC)	19088-73-4	Fluorescent metabolite standard CYP1A2 and CYP2C19	5
451014	3-Cyano-7-ethoxycoumarin (CEC)	117620-77-6	Fluorescent substrate CYP1A2 and CYP2C19	5
451740	7-Methoxy-4-(trifluoromethyl)-coumarin (MFC)	575-04-2	Fluorescent CYP2C9, CYP2C19, and CYP2E1 substrate	5
451745	7-Methoxy-4-(trifluoromethyl)-coumarin (MFC)	575-04-2	Fluorescent CYP2C9, CYP2C19, and CYP2E1 substrate	25
451700	AMMC	N/A	Fluorescent CYP2D6 substrate	5
451705	AMMC	N/A	Fluorescent CYP2D6 substrate	25
451701	AHMC	15776-59-7	AMMC metabolite CYP2D6 standard	5
451750	Dibenzylfluorescein (DBF)	97744-44-0	Fluorescent CYP3A4 and CYP2C8 substrate	5
451755	Dibenzylfluorescein (DBF)	97744-44-0	Fluorescent CYP3A4 and CYP2C8 substrate	25
451720	7-Benzyloxyquinoline (7-BQ)	131802-60-3	Fluorescent CYP3A4 substrate	5
451725	7-Benzyloxyquinoline (7-BQ)	131802-60-3	Fluorescent CYP3A4 substrate	25
451730	7-Benzyloxy-4-(trifluoromethyl)-coumarin (BFC)	N/A	Fluorescent CYP3A4 substrate	5
451735	7-Benzyloxy-4-(trifluoromethyl)-coumarin (BFC)	N/A	Fluorescent CYP3A4 substrate	25
451731	7-Hydroxy-4-(trifluoromethyl)-coumarin (HFC)	575-03-1	Metabolite standard for MFC, BFC	5
451721	7-Hydroxyquinoline	580-20-1	Metabolite standard for BQ	5

Unlabeled Substrates, Metabolites, and Inhibitors

Cat. No.	Description	CAS#	CYP Application	Qty
451037	Furafylline	80288-49-9	Mechanism-based inhibitor CYP1A2	5 mg
451710	Bupropion Hydrochloride	31677-93-7	Substrate CYP2B6	25 mg
451711	Hydroxybupropion	N/A	Metabolite standard CYP2B6	5 mg
451782	Desethylamodiaquine	79352-78-6	Metabolite standard CYP2C8	5 mg
451656	6 α -Hydroxypaclitaxel	N/A	Metabolite standard CYP2C8	10 nmol
451019	Sulfaphenazole	526-08-9	Competitive inhibitor CYP2C9	5 mg
451000	Tienilic Acid (Ticrynafen)	40180-04-9	Mechanism-based inhibitor CYP2C9	5 mg
451743	4'-Hydroxydiclofenac	94118-84-9	Metabolite standard CYP2C9	5 mg
451780	Tienilic-3C-alcohol	N/A	Substrate CYP2C18	5 mg
451032	S-Mephenytoin	70989-04-7	Substrate CYP2C19	5 mg
451795	(S)-(+)-N-3-Benzylrivanol	N/A	Competitive inhibitor CYP2C19	5 mg
451033	4'-Hydroxymephenytoin	61837-65-8	Metabolite standard CYP2C19	5 mg
451034	Bufuralol HCL	59652-29-8	Substrate CYP2D6	5 mg
451030	Dextrorphan-D-Tartrate	143-98-6	Metabolite standard CYP2D6	5 mg
451035	1-Hydroxybufuralol Maleate	57704-16-2	Metabolite standard CYP2D6	5 mg
451036	6-Hydroxychlorzoxazone	1750-45-4	Metabolite standard CYP2E1	5 mg
451785	Azamulin	76530-44-4	Mechanism-based inhibitor CYP3A4	5 mg
451023	Ketoconazole	65277-42-1	Mixed-type inhibitor CYP3A4	5 mg
451020	Oxidized Nifedipine	67035-22-7	Metabolite standard CYP3A4	5 mg
451630	p-3'-Hydroxypaclitaxel	132160-32-8	Metabolite standard CYP3A4	20 nmol
451012	6 β -Hydroxytestosterone	62-99-7	Metabolite standard CYP3A4	5 mg
451022	7-Hydroxycoumarin Glucuronide (Umbelliferone Glucuronide)	N/A	Metabolite standard UGT	5 mg
451024	7-Hydroxycoumarin Sulfate, K ⁺ salt	N/A	Metabolite standard SULTs	5 mg
451025	Terfenadine Alcohol Metabolite	N/A	Substrate CYP2J2, CYP4F12, and CYP3A4	5 mg

TISSUE FRACTIONS

Tissue fractions from human and animal livers represent an important tool in preclinical metabolism studies for predicting the toxicity and pharmacokinetic properties of a drug compound. Liver microsomes from humans and animal species play an important role in evaluating drug compounds for metabolic stability, reactive metabolites, drug-drug interactions, reaction phenotyping, and metabolite identification.

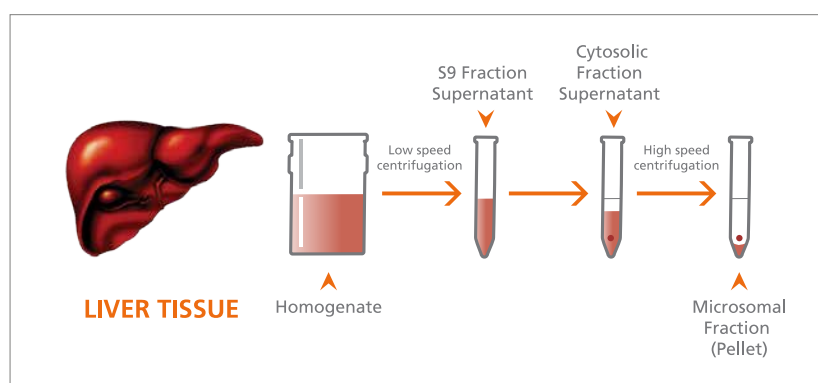
For years, Corning has been a trusted provider of a wide range of high-quality tissue fractions, including liver and intestinal microsomes, as well as ancillary products (e.g., cofactors, chemical substrates, metabolites, and inhibitors) necessary to perform metabolism-based assays.

Corning® Gentest™ microsomes, cytosol, and S9 subcellular fractions provide a convenient, cost-effective source of native enzymes responsible for phase I and phase II metabolism of drugs. These enzymes include cytochrome P450 enzymes (CYP), UDP-glucuronosyl transferases (UGT), and flavin-containing monooxygenase (FMO). As part of Corning Life Sciences' on-going commitment to bringing innovative tools to life scientists and emerging areas of ADME/Tox research, Corning added a large donor pool of human liver microsomes (HLMs), the Corning UltraPool™ HLM 150, to the Corning portfolio of human liver microsomes. This large donor pool better represents the average patient population and known CYP polymorphisms, enabling consistent experimental results in multi-year programs, and offering a time savings by reducing the time required qualifying new lots of HLMs.

Corning Gentest allelic variant HLM panels are genotyped single donors designed to help address the growing concerns over drug safety for all patients including outlier population with polymorphorphic gene (CYPs, UGTs, etc.). Genetic polymorphisms exist for many drugs as most P450s have been shown to possess mutant alleles. Polymorphisms may also explain some idiosyncratic reactions. We have prepared panels where the 1% of the population has a genetic polymorphism with a CYP or UGT defect. Genotype allelic variant panels are available for CYP2C8, 2C9, 2C19, 2D6, 3A5, and UGT1A1.

Many steps are taken during the manufacture of all Corning Gentest tissue fraction products to reduce lot-to-lot variability and to ensure reproducibility. Complete assay results and donor information are provided on the product insert. Contact CLSscientificsupport@corning.com to obtain up-to-date single donor information.

Note: All human tissues are prepared from donors who tested negative serologically for HIV-1, HIV-2, HTLV-1, HTLV-2, HBV, HCV, and syphilis. All tissues are subsequently tested for the same pathogens by PCR.



Overview of the manufacturing workflow

Human Liver Microsome Tissue Fraction Products



Corning Gentest Human Mixed Pooled Microsomes, Cytosol, and S9

Cat. No.	Description	Protein Concentration (mg/mL)	Qty/Pk
452117	Mixed gender Corning UltraPool 150-donor HLM (equal mix of male and female donors)	20	0.5 mL
452118	Mixed gender Corning UltraPool 150-donor HLM (80 vials of 452117 packaged in an easy-count box)	20	80 vials
452116	Mixed gender Corning UltraPool 150-donor S9	20	1.0 mL
452115	Mixed gender Corning UltraPool 150-donor Cytosol	20	1.0 mL
452156	Mixed gender pooled 50-donor HLM (equal mix of male and female donors)	20	0.5 mL
452227	Human 50-donor tissue fraction kit (Includes 1 vial each of HLM, S9, and Cytosol prepared from the same 50 donors)	20	1 kit
452161	Mixed gender HLM mixed pooled (approx. 20 donors)	20	0.5 mL
452155	Mixed HLMs packaged in an easy-count box (80 vials of 452161) (approx. 20 donors)	20	80 vials
452961	Mixed gender pooled 20-donor S9	20	1 mL

Corning Gentest Human Pooled Specialty Products

452165	Mixed gender pooled CMV negative HLM	20	0.5 mL
452172	Pooled male HLM	20	0.5 mL
452183	Pooled female HLM	20	0.5 mL
452210	Mixed gender pooled intestinal microsomes	10	0.2 mL

Corning Gentest Human Individual Liver Microsomes Panel

Cat. No.	Description	Protein Concentration (mg/mL)	Qty/Pk
452138	P450 single donor HLM panel High/low P450 single donor HLM panel	20	0.5 mL

The most current list of donors can be found at www.corning.com/lifesciences/admetox.

Corning Gentest Individual Allelic Variant Donor Panels

452141	CYP2D6(*3-*8) PM [†]	20	0.5 mL
452142	CYP2C9(*2*2), (*2*3), and (*3*3)	20	0.5 mL
452143	CYP2C19(*2-*5) PM [†]	20	0.5 mL
452144	CYP2C8(*3*3)	20	0.5 mL
452135	CYP3A5(*1*1) high expresser	20	0.5 mL
452136	CYP3A5(*1*3) high expresser	20	0.5 mL
452137	CYP3A5(*3*3) wild-type low expresser	20	0.5 mL
452132	UGT1A1(*28*28) low expresser	20	0.5 mL
452133	UGT1A1(*1*28) moderate expresser	20	0.5 mL
452134	UGT1A1(*1*1) wild-type high expresser	20	0.5 mL

[†]Poor Metabolizer.

Note: Orders must include donor lot number as well as catalog number. Each lot number corresponds with a specific donor. To view an up-to-date listing of donors with donor demographics, donor history, and characterization data, visit www.corning.com/lifesciences/admetox.



Animal Liver Tissue Fraction Products

Corning Gentest Animal Pooled Liver Microsomes

Cat. No.	Description	Protein Concentration (mg/mL)	Qty (mL)
Rat Liver Microsomes			
452501	Sprague-Dawley, male	20	0.5 mL
452502	Sprague-Dawley, female	20	0.5 mL
452511	Wistar Han, male	20	0.5 mL
452521	Fischer 344, male	20	0.5 mL
452522	Fischer 344, female	20	0.5 mL
Mouse Liver Microsomes			
452220	B6C3F1, male	20	0.5 mL
452701	CD-1, male	20	0.5 mL
452702	CD-1, female	20	0.5 mL
Dog Liver Microsomes			
452601	Beagle, male	20	0.5 mL
452602	Beagle, female	20	0.5 mL
Monkey Liver Microsomes			
452413	Cynomolgus, male	20	0.5 mL
452411	Cynomolgus, female, export	20	0.5 mL
452424	Rhesus, male	20	0.5 mL
452340	Marmoset, male	20	0.5 mL
452341	Marmoset, female	20	0.5 mL
Guinea Pig Liver Microsomes			
452311	Dunkin Hartley, male	20	0.5 mL
452313	Dunkin Hartley, female	20	0.5 mL
Mini-Pig Liver Microsomes			
452322	Gottigen, male	20	0.5 mL
Rabbit Liver Microsomes			
452201	New Zealand white, male	20	0.5 mL

Hazard Warning: Monkey tissue fractions are prepared from freshly frozen tissues. These materials are tested and found negative for Herpes B and SIV. It is recommended this material be considered a potential biohazard.

Corning® Gentest™ Animal Pooled Liver S9

Cat. No.	Description	Protein Concentration (mg/mL)	Qty (mL)
Rat Liver S9			
452591	Sprague-Dawley, male	20	1.0
452593	Fischer 344, male	20	1.0
452594	Fischer 344, female	20	1.0
Mouse Liver S9			
452791	CD-1, male	20	1.0
452792	CD-1, female	20	1.0
Dog Liver S9			
452693	Beagle, male	20	1.0
Monkey Liver S9			
452494	Cynomolgus, male	20	1.0
452492	Cynomolgus, female, export	20	1.0
452473	Rhesus, male	20	1.0

Corning Gentest Animal Liver Cytosol

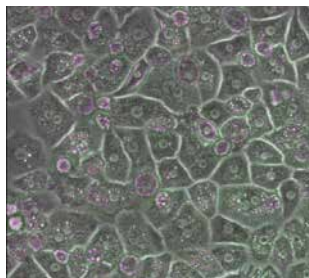
Rat Liver Cytosol			
452581 (male)	Sprague-Dawley, male	20	1.0
Monkey Liver Cytosol			
452461 (male)	Cynomolgus, male	20	1.0
452462 (female)	Cynomolgus, female	20	1.0

Hazard Warning: Monkey tissue fractions are prepared from freshly frozen tissues. These materials are tested and found negative for Herpes B and SIV. It is recommended this material be considered a potential biohazard.

PRIMARY HEPATOCYTE CELLS

Corning provides both fresh and cryopreserved hepatocytes to support major applications in drug and xenobiotic biotransformation, including plateable hepatocytes for P450 induction, plateable and suspension hepatocytes for drug metabolism, and SLC uptake transport.

Corning uses the latest technology available for cryopreservation procedures. These procedures provide high viability of human and animal hepatocytes after thaws. However, prior to using Corning® Gentest™ cryopreserved hepatocytes, it is recommended to use a purification method to remove the cryopreservation reagents. After purification, plateable hepatocyte can be cultured on Corning Collagen or Corning Matrigel® matrix-coated surfaces. Corning BioCoat™ Collagen I cultureware and Corning Matrigel matrix cultureware are TC-treated vessels with a uniform application of rat tail Collagen type I or Matrigel matrix, respectively. These cultureware are manufactured in a highly controlled environment and rigorously tested to assure product consistency and performance.





Corning® Gentest™ Human CryoHepatocytes

Corning offers both plateable and suspension cryopreserved human hepatocytes. Each lot is pre-screened and characterized for activities that are suitable for ADME applications, such as drug metabolism, CYP induction, drug transport, and toxicity studies. Some lots may be suitable for multiple applications. These characterizations provide researchers with the data necessary to select lots which are well-suited to their research needs. For activities and donor demographic information, please contact ScientificSupport@corning.com.

Cat. No.	Description	Size	Qty/Pk
454541	Corning Gentest plateable transporter-qualified human cryohepatocytes	≥5 million cells	1.5 mL
454543	Corning Gentest Plateable Metabolism-qualified human cryohepatocytes	≥5 million cells	1.5 mL
454550	Corning Gentest inducible-qualified human cryohepatocytes*	2-5 million cells	1.5 mL
454551	Corning Gentest inducible-qualified human cryohepatocytes*	≥5 million cells	1.5 mL
454426	Corning Gentest SLC transporter-qualified human cryohepatocytes in suspension	2-5 million cells	1.5 mL
454427	Corning Gentest SLC transporter-qualified human cryohepatocytes in suspension	≥5 million cells	1.5 mL
454503	Corning Gentest metabolism-qualified human cryohepatocytes in suspension	2-5 million cells	1.5 mL
454504	Corning Gentest metabolism-qualified human cryohepatocytes in suspension	≥5 million cells	1.5 mL
454460	Corning Gentest Hepatocyte Transporter Suspension Assay Kit Kit contains a detailed transporter uptake protocol, 10 mL 100 tests of filtration oil, and 100 easy-to-cut centrifuge tubes	–	100 tests

*Contact us about P450 induction study contract services at 888.334.5229 x2246 or 781.935.5115 x2246.

Corning Gentest Animal CryoHepatocytes

Corning Gentest cryopreserved animal hepatocytes allow researchers to study toxicological and pharmacokinetic properties of new chemical entities (NCEs) *in vitro* prior to expensive *in vivo* animal testing. Understanding species differences in metabolism is critical to selecting appropriate preclinical species for toxicity and pharmacokinetic studies. Corning Gentest animal cryohepatocytes are suitable for use in metabolic stability, metabolite profiling, and cytotoxicity studies.

- ▶ **Convenience** – animal cryopreserved hepatocytes for rat, mouse, dog, and monkey are available as cryopreserved vial suspension cells; just thaw and perform studies when needed
- ▶ **Full characterization** – tested for high viability and phase I and II metabolic enzymes
- ▶ **Easy cell purification** – quickly purify from the cryoprotectant and non-viable cells when using the Corning Gentest cryohepatocyte purification kit (Cat. No. 454534)

Rat CryoHepatocytes

Cat. No.	Description	Cell Quantity	Qty (mL)
454701	Sprague-Dawley, male	≥5 million cells	1.5
454703	Sprague-Dawley, female	≥5 million cells	1.5

Mouse CryoHepatocytes

454310	CD-1, male	≥2 million cells	1.5
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Dog CryoHepatocytes

454830	Beagle, male	≥4 million cells	1.5
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Monkey CryoHepatocytes

454930	Cynomolgus, male	≥5 million cells	1.5
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Hazard Warning: Monkey tissue fractions are prepared from freshly frozen tissues. These materials are tested and found negative for Herpes B and SIV. It is recommended this material be considered a potential biohazard.

Related Products for Hepatocyte Culture



Cat. No.	Description	Qty
454534	Corning® Gentest™ high viability cryohepatocyte recovery kit Platable human cryopreserved hepatocyte recovery and plating medium. Kit contains 2X tubes (45 mL each) recovery media, 2X tubes (45 mL each) plating media.	1 kit
454560	Corning Gentest high viability cryohepatocyte recovery medium	45 mL
454561	Corning Gentest cryohepatocyte plating medium	45 mL
454600	Corning Gentest cryohepatocyte one-step purification kit Each kit allows for the purification of four individual 1.5 mL cryotubes. Use for fast and easy purification.	1 kit
355056	Corning hepatocyte culture media kit 500 mL plus EGF supplement. Use for serum-free medium to maintain hepatocyte cultures <i>in vitro</i> ; commonly used to culture plated human fresh or cryopreserved hepatocytes on Corning BioCoat™ rat tail Collagen I Multiwell plates and flasks.	500 mL
454460	Corning Gentest hepatocyte transporter suspension assay kit Kit includes a detailed transporter uptake protocol, 10 mL of filtration oil, and 100 easy-to-cut centrifuge tubes.	100 tests
40-550-CV*	Corning hepatocyte maintenance medium Maintains the physiological relationships between hepatic Phase I and II drug metabolism enzymes, influx and efflux transporters, while meeting the long-term high metabolic needs of hepatocytes. Defined, animal-origin free, serum-free, and optimized for primary human hepatocytes.	500 mL

*Produced by Mediatech, Inc., a Corning subsidiary. To order, go to www.corning.com/lifesciences/media.

Other Related Products for Hepatocyte Culture

- ▶ Corning BioCoat Poly-D-Lysine cultureware
- ▶ Corning BioCoat Matrigel® matrix cultureware
- ▶ Corning BioCoat rat tail Collagen I cultureware
- ▶ Corning Matrigel basement membrane matrix

For more information on products for hepatocyte culture, see the **Extracellular Matrices, Biologically Coated Surfaces, and Permeable Support Inserts** section of this catalog.



Important Ordering Information

HepatoLink® is the Corning Life Sciences immediate response system providing researchers with instant notification when Corning Gentest hepatocyte products are available. For your convenience, select a preferred contact method—email, phone, and/or SMS text alerts. Upon registration, you will be sent donor characterization data when a new lot becomes available. You can register online at www.corning.com/lifesciences/hepatolink. Place your order directly through Corning's online system. If you have any questions regarding Corning's program or your participation, please contact us at **978.442.2200** or email hepatocytes@corning.com.

All Corning Gentest fresh and cryohepatocyte orders must be lot specific. Each lot number corresponds with a specific donor and must be included with your order. An up-to-date listing of Corning Gentest human fresh and cryohepatocyte donors with donor demographics, donor history, and characterization data is maintained at www.corning.com/lifesciences/admetox.

ANTIBODIES FOR METABOLIC ENZYMES

Corning offers many monoclonal and polyclonal antibodies for use in P450s and UGT studies. The antibodies have been qualified for use in western blotting or inhibition studies.

Cat. No.	Description	Recommended Dilution	Preparation	Immunogen	Application Use	Qty (µL)
For P450s						
458312	IH-MAB-1A2, Anti-human CYP1A2	N/A	Mouse monoclonal	Human CYP1A2	Human CYP1A2 detection by immunoinhibition	400
458106	IH-WB-MAB-2A6, Anti-human CYP2A6	1:500 with alkaline phosphatase secondary or chemiluminescence detection	Mouse monoclonal	CYP2A purified from rat liver	Human CYP2A6 detection by immunoblot, human CYP2A6 detection by immunoinhibition	400
458211	WB-1B1, Anti-human CYP1B1 serum	1:500 with enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human CYP1B1 detection by immunoblot	400
458326	IH-MAB-2B6, Anti-human CYP2B6	N/A	Mouse monoclonal	Human CYP2B6	Human CYP2B6 detection by immunoinhibition	400
458226	WB-2B6, Anti-human CYP2B6 serum	1:500 with enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human CYP2B6 detection by immunoblot	400
458328	IH-MAB-2C8, Anti-human CYP2C8	N/A	Mouse monoclonal	Human CYP2C8	Human CYP2C8 detection by immunoinhibition	400
458209	WB-2C9, Anti-human CYP2C9 serum	1:500 with enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human CYP2C9 detection by immunoblot	400
458319	IH-MAB-2C19, Anti-human CYP2C19	N/A	Mouse monoclonal	Human CYP2C19	Human CYP2C19 detection by immunoinhibition	400
458219	WB-2C19, Anti-human CYP2C19 serum	1:333 with enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human CYP2C19 detection by immunoblot	400
458366	IH-MAB-2D6, Anti-human CYP2D6	N/A	Mouse monoclonal	Human CYP2D6	Human CYP2D6 detection by immunoinhibition	400
458246	WB-MAB-2D6, Anti-human CYP2D6	1:500 with alkaline phosphatase secondary; 1:3000 with enhanced chemiluminescence detection	Mouse monoclonal	Human CYP2D6	Human CYP2D6 detection by immunoblot	400 µ
458321	IH-MAB-2E1, Anti-human CYP2E1	N/A	Mouse monoclonal	Human CYP2E1	Human CYP2E1 detection by immunoinhibition	400
458334	IH-MAB-3A4, Anti-human CYP3A4	N/A	Mouse monoclonal	Human CYP3A4	Human CYP3A4 detection by immunoinhibition	400
458254	WB-MAB-3A, Anti-human CYP3A	1:500 with alkaline phosphatase secondary; 1:3000 with enhanced chemiluminescence detection	Mouse monoclonal	Human liver Cytochrome P450 fraction	Human CYP3A4/3A5/3A7 detection by immunoblot	400
458234	WB-3A4, Anti-human CYP3A4 serum	1:500 with both alkaline phosphatase secondary and enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human CYP3A4/3A7 detection by immunoblot	400
458235	WB-3A5, Anti-human CYP3A5 serum	1:500 with alkaline phosphatase secondary; 1:3000 with enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human CYP3A5 detection by immunoblot	400
For UGTs						
458411	WB-UGT1A1, Anti-human UGT1A1 serum	1:500 with enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human UGT1A1 detection by immunoblot	400
458427	WB-UGT2B7, Anti-human UGT2B7 serum	1:500 for both alkaline phosphatase secondary and enhanced chemiluminescence detection	Rabbit polyclonal	Peptide	Human UGT2B7 detection by immunoblot	400

CUSTOM PRODUCTS

In addition to the products listed in this guide, Corning has more than 20 years of experience offering custom special preparations from a wide range of species and tissues. Custom products include, but are not limited to, hepatocytes, tissue fractions, and recombinant enzymes. Our custom product team handles the complete process, including tissue ordering, preparation, concentration, packaging, characterization, and delivery. For additional information, please contact DLcCustRes@corning.com or consult your Corning Drug Discovery Sales Specialist.

Contract Research Services

Corning® GentestSM Contract Research Services have been serving customers for more than 20 years, supporting drug discovery and development programs, from secondary screens to post-marketing commitment. Our Study Directors are highly skilled scientists with an in-depth knowledge of absorption, transport, metabolism, and toxicity. This expertise enables Corning Life Sciences Study Directors to partner with you to develop and deliver a broad range of *in vitro* ADME/Tox studies customized to meet your discovery and development project needs. We ensure the highest level of quality and adhere to current regulatory requirements and applicable regulatory agency guidance documents.

Utilizing state-of-the-art materials, techniques, and equipment, Corning Life Sciences is ideally suited to assist you in screening for viable drug candidates during drug discovery or to prepare regulatory agency submission-quality reports for your drug development compounds. Let our team of experts take you to the next level with studies designed to predict drug-drug interactions and human pharmacokinetics using the innovative Corning GentestTM products, cell models, and methodologies.

Permeability and Transport Studies

ABC Transporters

A leader since 1998 in providing drug-transporter products and services, Corning offers diverse options with a comprehensive panel of ATPase binding cassette (ABC) efflux transporters expressed in our transfected cell lines, vesicles, and membranes. From screening assays to comprehensive drug-drug interaction assessment studies, we can provide solutions to your efflux transporter assay needs. Corning's bidirectional transport assays using Caco-2 and the Corning Gentest MDR1-LLC-PK1 cell lines comply with regulatory agency recommended approaches to determine test article apparent permeability (P_{app}) and assess P-glycoprotein (P-gp) mediated transport and inhibition. Screening and comprehensive interaction studies are also available for efflux transporters BCRP, BSEP, and MRPs, as recommended by regulatory agencies.

SLC Transporters

Using our solute carrier (SLC) over-expressing Corning TransportoCellsTM product line, we conduct screening and step-wise approach drug-drug interaction assays to assess whether your test article is a substrate and/or inhibitor of uptake transporters in alignment with the latest FDA, EMA, and ITC recommendations for development of investigational drugs. Uptake assays can be performed OATP1B1, OATP1B3, OAT1, OAT3, OCT1, OCT2, MATE1, MATE2-K, and additional transporters.

Metabolic Stability and Intrinsic Clearance

Corning provides rapid *in vitro* metabolic stability and intrinsic clearance testing using several different enzyme sources. Most often, this test utilizes hepatocytes or liver microsomes. Corning's metabolic stability testing using hepatocytes features carefully selected, single-freeze donor pools with results provided for human and preclinical species to maintain data consistency from assay to assay. The use of Corning UltraPoolTM HLM 150 microsomes ensures minimal inter-assay variability.

Enzyme Inhibition Studies

As the *in vitro* ADME market leader in cytochrome P450 (CYP) products and services, Corning provides CYP inhibition services with high quality data analysis. Assays are conducted using industry leading Corning UltraPool HLM 150 pooled human liver microsomes, drug probe substrates, and validated LC/MS/MS analysis methods using stable-labeled isotope internal standards. Capabilities include direct and time-dependent inhibition. Multiple endpoints are possible, including IC₅₀, IC₅₀ shift (dilution and non-dilution methodology), as well as K_i and k_{inact}. Corning also provides a comprehensive suite of UGT inhibition assays.

Enzyme Induction Studies

Since 2002, Corning has been providing regulatory agency-driven cytochrome P450 (CYP) induction services using both cryopreserved and freshly isolated human hepatocytes. The use of pre-qualified Corning® Gentest™ inducible cryopreserved hepatocytes ensures a predictable response and accelerated data availability. Testing options include enzyme activity and mRNA endpoints for CYP1A2, CYP2B6, CYP3A4, CYP2C8, CYP2C9, CYP2C19, UGTs, transporters, and more. Follow-up the conventional 3 donor, 3 CYP assays with relative induction scoring (RIS correlation method) in our panel of specially qualified human hepatocyte donors. Ask about our customized assays that can closely align with your in-house methods.

Reaction Phenotyping Studies

Reaction phenotyping studies help identify enzyme-mediated pathways of elimination for a compound — key information that affects population variability in metabolism and the risk of it becoming a victim drug in a drug-drug interaction event. Assays are performed using Corning Supersomes™ enzymes, human liver microsomes, chemical inhibitors, and/or immunoinhibitory antibodies. We can identify metabolic pathways catalyzed by multiple enzymes including CYPs, FMOs, UGTs, CES enzymes, and more to help identify the enzymology of metabolic pathways.

Custom Studies

Corning has expertise in adapting clients' protocols to facilitate comparison with in-house databases of results. Customizations can include the choice of enzyme source, extracellular matrix, treatment media, positive control-inducing chemical/concentration, and delivery solvent, as well as many other client requirements. In addition, over many years we have built several assays to meet our customers' unique and diverse drug metabolism and drug transporter needs, and have provided hundreds of drug-metabolism *in vitro* ADME needs.

For more information on Corning GentestSM Contract Research Services, contact Corning Life Sciences at 888.334.5229 x2546, 781.938.2546, e-mail ADMETOX@corning.com, or contact your local Corning Drug Discovery Sales Specialist or Account Manager.

