

Corning® TransportoCells™

Cryopreserved Transporter Cells

CORNING

Corning TransportoCells products are high performance mammalian cells in a convenient, cryopreserved format that transiently overexpress a single human SLC transporter protein. The frozen cells deliver robust data, while eliminating the time required to culture and maintain stable cell lines.

Culturing and maintaining stable transporter cell lines can be expensive and time-consuming. In addition, it can take a week or more to prepare cells for assaying. Corning TransportoCells products can be thawed, plated and assayed in just two days with high uptake ratios.

Features

- ▶ Cryopreserved format provides flexibility for experimental planning
- ▶ Cells are readily available, can be stored onsite and shipped globally
- ▶ Cells can be thawed, plated and assayed in just two days
- ▶ Robust results with uptake ratios ≥ 10 fold
- ▶ Consistent with other mammalian cell-based models
- ▶ One vial contains 10 million cells and supports one 24-well or one 96-well plate
- ▶ Includes all current USFDA and European Medicines Agency (EMA)-recommended SLC drug transporters

Convenient and Cost-efficient

Corning TransportoCells products are a convenient, cost-efficient alternative to maintaining stable cell lines. They provide the utmost flexibility for experimental planning. The cells can be removed from storage one day and assayed the following day.

Robust and Validated

Corning TransportoCells products deliver high performance and robust data with uptake ratios ≥ 10 fold. The model has been fully validated for substrate specificity, transporter kinetics and inhibition profiles to ensure data are consistent with existing transporter cell models.



Supports Regulatory Recommendations

Corning TransportoCells products support USFDA and EMA recommendations for identification of drug transporters and transporter drug-drug interaction studies critical in the development of new investigational drugs.

Contract Research Services Available

SLC Transporter Interaction Studies using Corning TransportoCells products are available from Corning GentestSM Contract Research Services. All assays are designed and built to meet regulatory agency recommendations.

Table 1. Performance Summary of Corning® TransportoCells™ Cryopreserved SLC Transporter Cells. The post thaw viability exceeds 80%. Uptake activity of HEK293 cells transiently over-expressing OATP1B1*1a (wild-type), OATP1B3, OAT1, OAT3, OCT1 and OCT2, respectively, are evaluated by incubating the cells with listed prototypical substrates at indicated concentration. Uptake ratio is calculated by dividing uptake activity measured in the SLC transporter cells by that in control cells.

Transporters	Post-Thaw Viability	Probe Substrate	Incubation Time (min)	Uptake Activity in Transporter Cells (pmol/mg/min)	Uptake Activity in Control Cells (pmol/mg/min)	Uptake Ratio
OATP1B1*1a	90%	2 μM E17βG	5	42.2*	0.46*	92*
OATP1B3	91%	2 μM CCK-8	5	201.3*	0.87*	232*
OAT1	93%	3 μM PAH	10	141.0	0.38	372
OAT3	88%	2 μM E3S	5	121.1	0.91	133
OCT1	88%	30 μM TEA	10	253.0	4.8	53
OCT2	89%	30 μM TEA	10	171.5	4.8	36

*Cell culture media supplemented with 5 mM sodium butyrate.

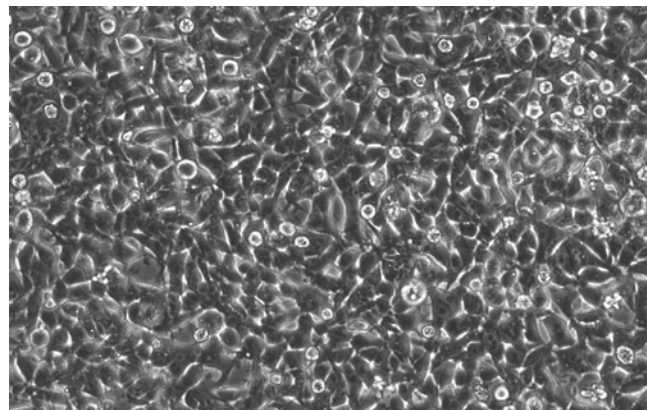


Figure 1. Cell Morphology after 24 Hours plating on Poly-D-Lysine Plate. After 24 hours post-plating on the Poly-D-Lysine plate, the HEK293 cells transiently over-expressing OATP1B1*1a, OATP1B3, OAT1, OAT3, OCT1 and OCT2, respectively, formed a confluent monolayer. The image represents OATP1B1*1a cells.

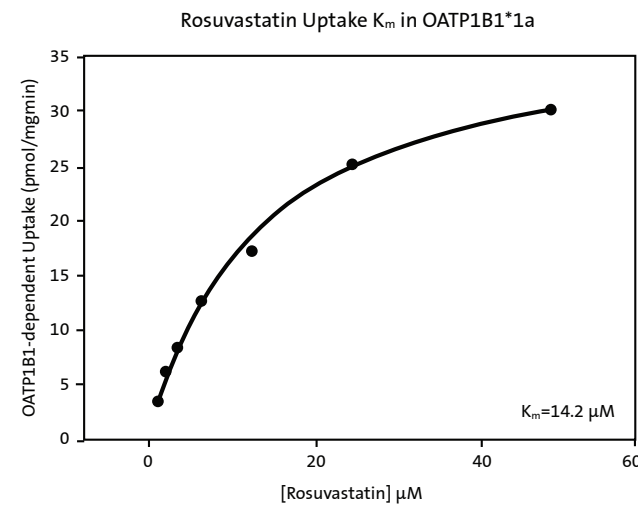


Figure 2. SLC Transporter Cells Kinetic Assay. Concentration-dependent uptake of prototypical substrates in the listed SLC transporter cells are determined. The solid line represents the nonlinear fit of the uptake into the transporter cells minus the uptake in the control cells. K_m values of the listed prototypical substrates are comparable to those published in the literature. Testing system is HEK293 stable cell line, except where noted.

Corning SLC Transporter Cells				Literature	
Transporter	Substrate	K_m (μM)	K_m (μM)	Reference	
OATP1B1*1a	Rosuvastatin	14.2	13.1	E. van de Steeg, et al., <i>DMD</i> , (2013)	
OATP1B3	CCK-8	20.2	16.5 *	Poirier A, et al., <i>J Pharmacokinet Pharmacodyn</i> , (2009)	
	Rosuvastatin	26.2	14.2	Kitamura S, et al., <i>DMD</i> , (2008)	
OAT1	PAH	87.5	28	Ueo H, et al., <i>Biochem Pharmacol.</i> , (2005)	
OAT3	E3S	4.0	6.3	Ueo H, et al., <i>Biochem Pharmacol.</i> , (2005)	

*Tested in CHO-stable cell line.

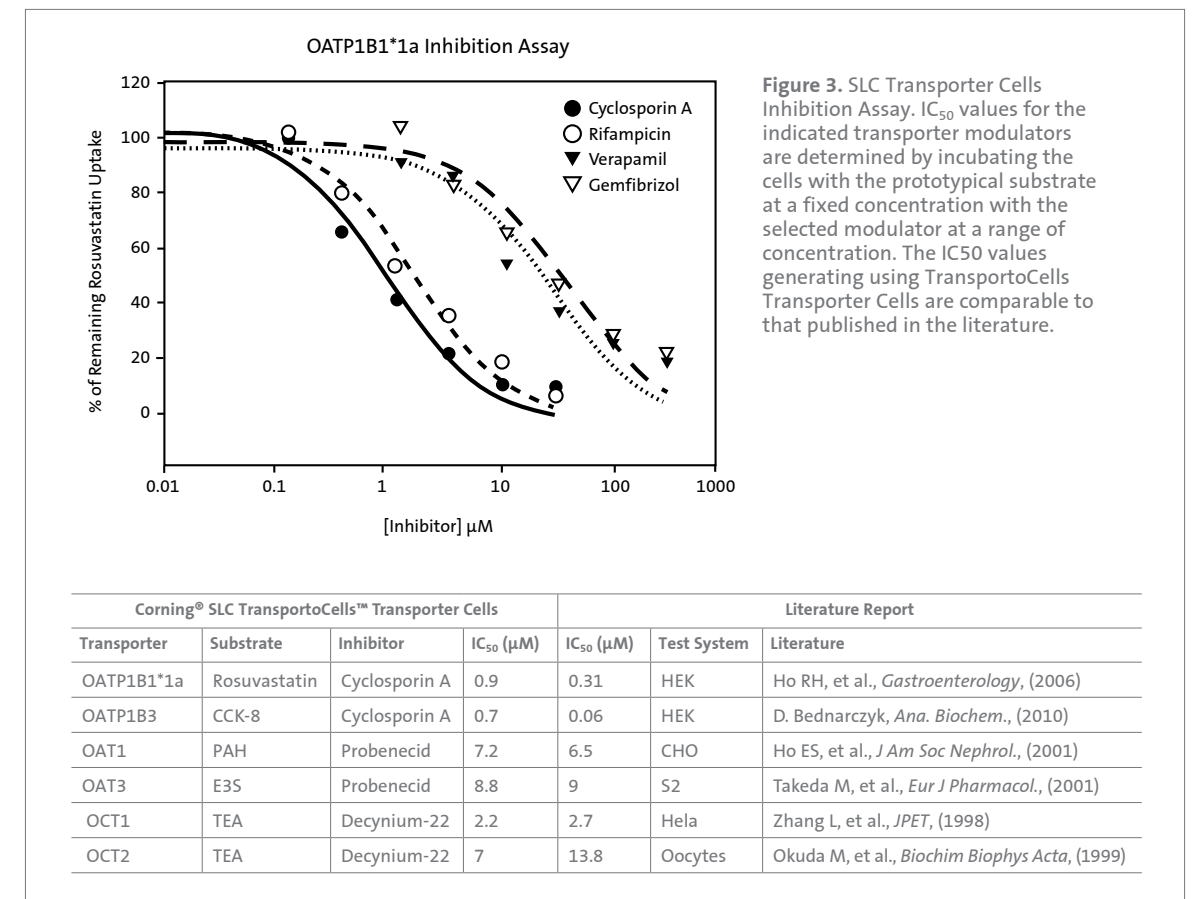


Figure 3. SLC Transporter Cells Inhibition Assay. IC_{50} values for the indicated transporter modulators are determined by incubating the cells with the prototypical substrate at a fixed concentration with the selected modulator at a range of concentration. The IC_{50} values generating using TransportoCells Transporter Cells are comparable to that published in the literature.

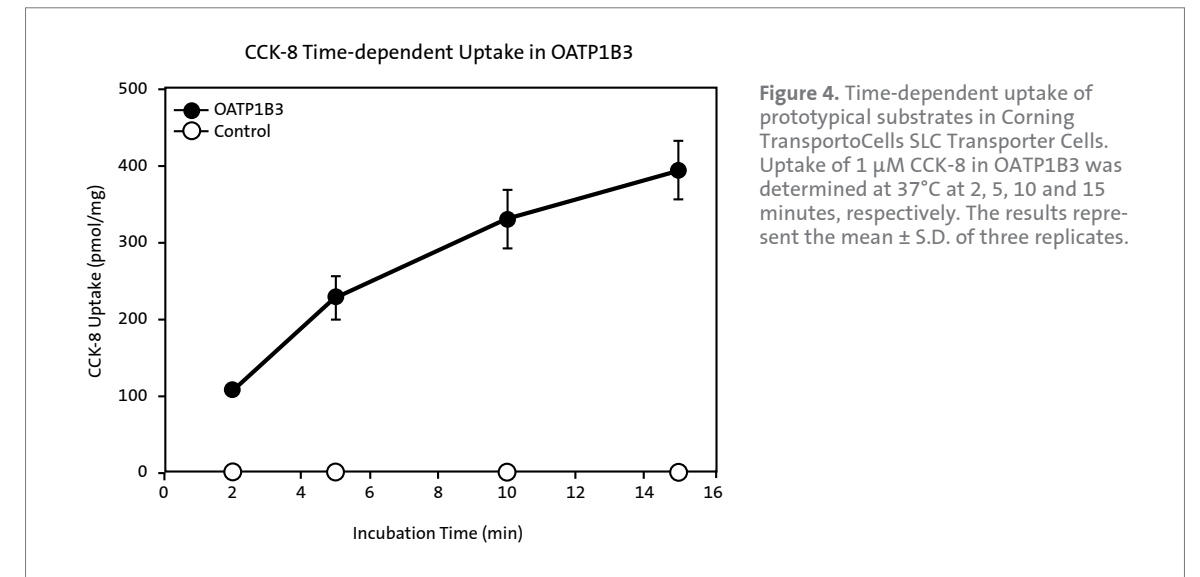


Figure 4. Time-dependent uptake of prototypical substrates in Corning TransportoCells SLC Transporter Cells. Uptake of 1 μM CCK-8 in OATP1B3 was determined at 37°C at 2, 5, 10 and 15 minutes, respectively. The results represent the mean ± S.D. of three replicates.

Corning® TransportoCells™ Human Cryopreserved SLC Transporter Cells Ordering Information

Cat. No.	Description	Full Name	Gene Accession Number	Qty.
354859	OATP1B1*1a/SLCO1B1*1a	Organic anion-transporting polypeptide 1B1 Wild Type (388A)	NM_006446.4	10 million cells
354851	OATP1B3/SLCO1B3	Organic anion-transporting polypeptide 1B3	NM_019844	10 million cells
354857	OAT1/SLC22A6	Organic anion transporter 1	NM_004790	10 million cells
354858	OAT3/SLC22A8	Organic anion transporter 3	NM_004254	10 million cells
354852	OCT1/SLC22A1	Organic cation transporter 1	NM_003057	10 million cells
354853	OCT2/SLC22A2	Organic cation transporter 2	NM_003058	10 million cells
354854	Control			10 million cells

Related Products and Contract Research Services

- ▶ ABC Human and Animal Transporter Membranes and Vesicles
- ▶ ATPase Assay Kit
- ▶ BCRP/MRP, and BSEP Vesicle Assay Kits
- ▶ MDR1 LLC-PK1 (P-gp) Cell Line
- ▶ Transporter-qualified Hepatocytes
- ▶ Corning cellgro® media, buffers and supplements (DMEM, FBS, non-essential amino acids, HBSS)
- ▶ Transwell® Permeable Supports
- ▶ Corning, Falcon® and BioCoat™ Microplates
- ▶ Caco-2, 5-day Assay System
- ▶ Corning GentestSM Contract Research Services – assays designed and built to meet regulatory agency recommendations
 - ABC Transporter Interaction Studies in cell lines and vesicles
 - SLC Transporter Interaction Studies in Corning TransportoCells Cryopreserved Transporter Cells
 - Transporter models include: Caco-2, transfected cell lines, vesicles, membranes, hepatocytes
 - Other available *in vitro* drug-drug Interaction studies, including enzyme induction and enzyme inhibition

Warranty/Disclaimer

Unless otherwise specified, all products are for research use only. Not for use in humans. Not intended for use in diagnostic or therapeutic procedures. Corning Life Sciences makes no claims regarding the performance of these products for clinical or diagnostic applications.

Use of Genetically Modified Microorganisms (GMM)

Information for European Customers: These products are genetically modified as described in Corning Life Sciences technical literature. As a condition of sale, use of this product 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.

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