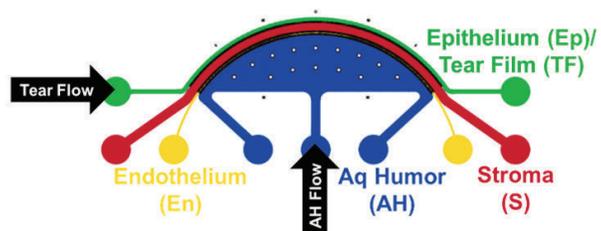
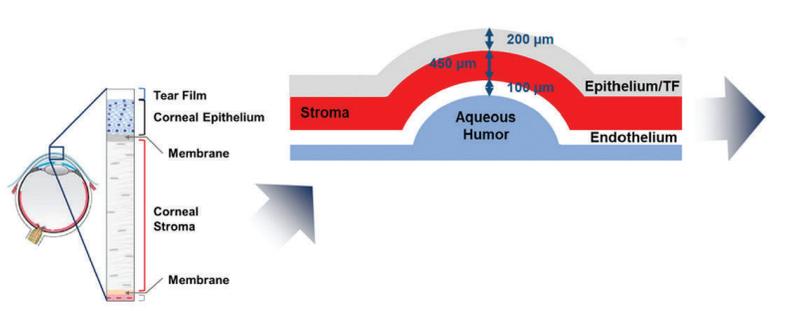
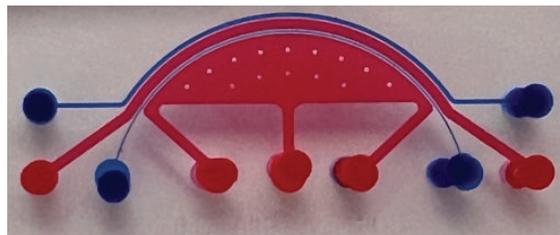


SynOcu Cornea-on-a-Chip for Drug Safety and Delivery

SynOcu™ Cornea-on-a-Chip model allows real-time visualization and quantitative assessment of trans-corneal transport under physiologically realistic flow conditions.

This bio-inspired design recreates a viable histological slice by integrating the tear film and aqueous humor into a modular design suited for the study of drug delivery and efficacy across the cornea.



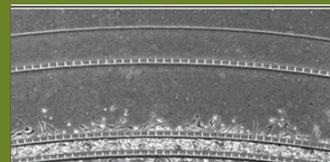
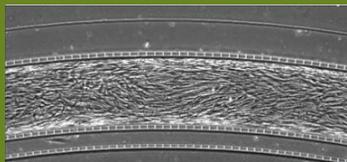
Modular architecture enables inclusion of other ocular tissues, such as the conjunctiva, for simultaneous evaluation of transport via the corneal and conjunctival pathways.

Epithelium

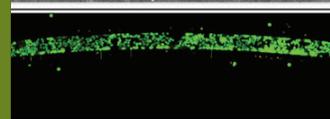
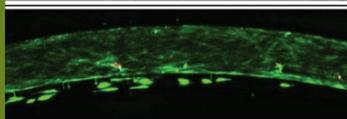
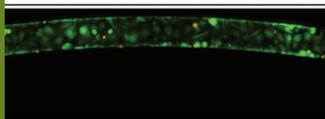
Stroma

Endothelium

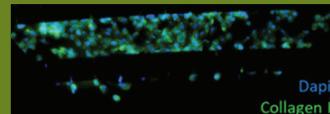
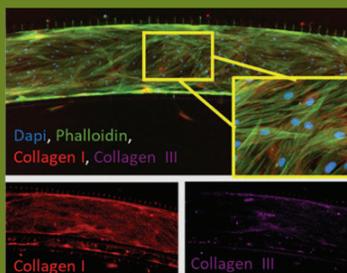
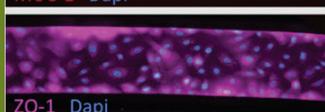
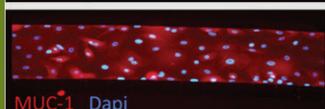
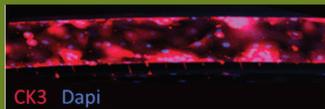
Morphology



Viability

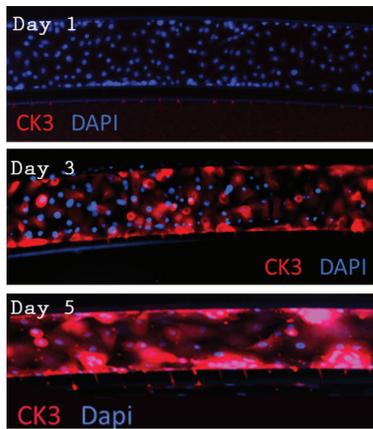


Phenotypic Expression

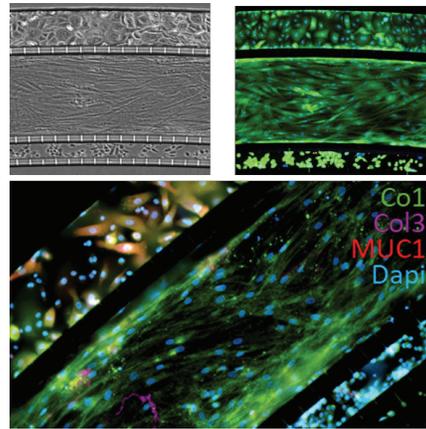


Cornea-on-a-Chip provides compartments for the culture of corneal epithelial, stroma, and endothelial cells, allowing cells to maintain characteristic phenotype as demonstrated by morphology, viability, and ICC staining.

Mimic a complex histological slice and monitor the cell-cell and cell-drug interactions.

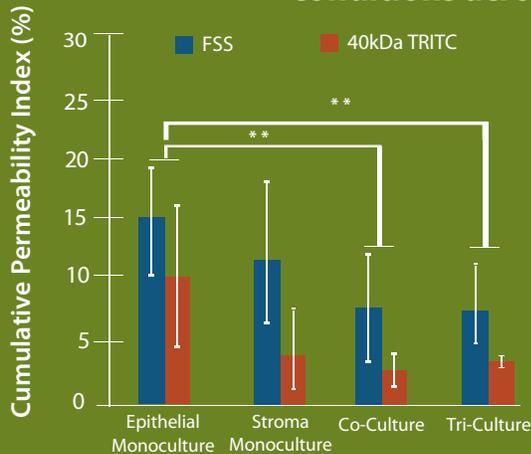


Epithelial stratification specific marker CK3 expression increases over time as the cells mature under flow-based culture conditions.

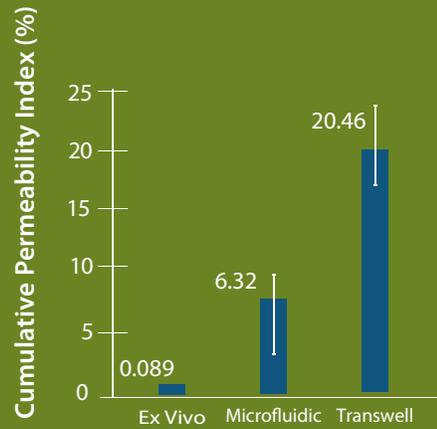


Tri-culture of corneal epithelial, stroma, and endothelial cells cultured on chip show typical cellular morphology, high viability, and express characteristic markers.

Visualize and assess drug transport under physiologically realistic conditions across the corneal vasculature



Permeability of small tracer molecules significantly decreases in Cornea-on-a-Chip co-cultures of epithelial and stroma cells, and with the addition of endothelial cells in corneal tri-cultures, mimicking the tight barriers in complex physiological samples.



The Cornea-on-a-Chip flow-based model more closely mimics paracellular transport in histological corneal tissue compared to static Transwell models.

Product Purchase Options

Catalog#	Description	Price
501000	SynOcu Cornea-on-a-Chip Starter Kit - Includes 12 chips, pneumatic priming device, tubing, clamps, syringes and needles	\$3,600
107001-3	SynOcu Bioinspired Cornea Chip - Pack of 3	\$550

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(256) 726-4838 • info@synvivobio.com • www.synvivobio.com

SYNVIVO
HEADQUARTERS
 601 Genome Way
 Suite 2023E
 Huntsville, AL 35806
fl_corn-on-chip_6-25