

# RepliGut® Model Systems

RECREATING THE HUMAN INTESTINAL EPITHELIUM

## APPLICATIONS

Explore effects of drugs on proliferative and differentiated cells in a single system.

Model inflammation for discovery of anti-inflammatory targets.

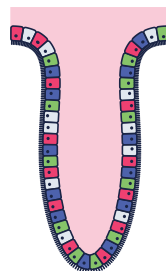
Study functional differences between small and large intestinal cells.

Characterize new intestinal targets, optimize new leads, and predict toxicity risk earlier with RepliGut® Model Systems

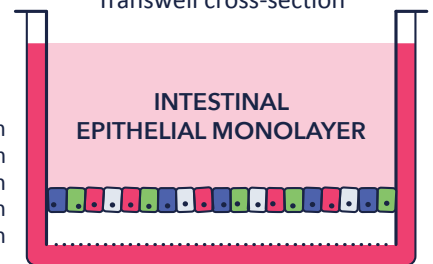
RepliGut® Model Systems consist of stem cells and a support matrix with media that drives expansion and differentiation of stem cells into all key cell types in the gut epithelium.

## Donor Cell Processing

### Individual Donor Crypt



### Individual Donor Stem Cells Transwell cross-section



Duodenum  
Jejunum  
Ascending Colon  
Transverse Colon  
Descending Colon



Expansion



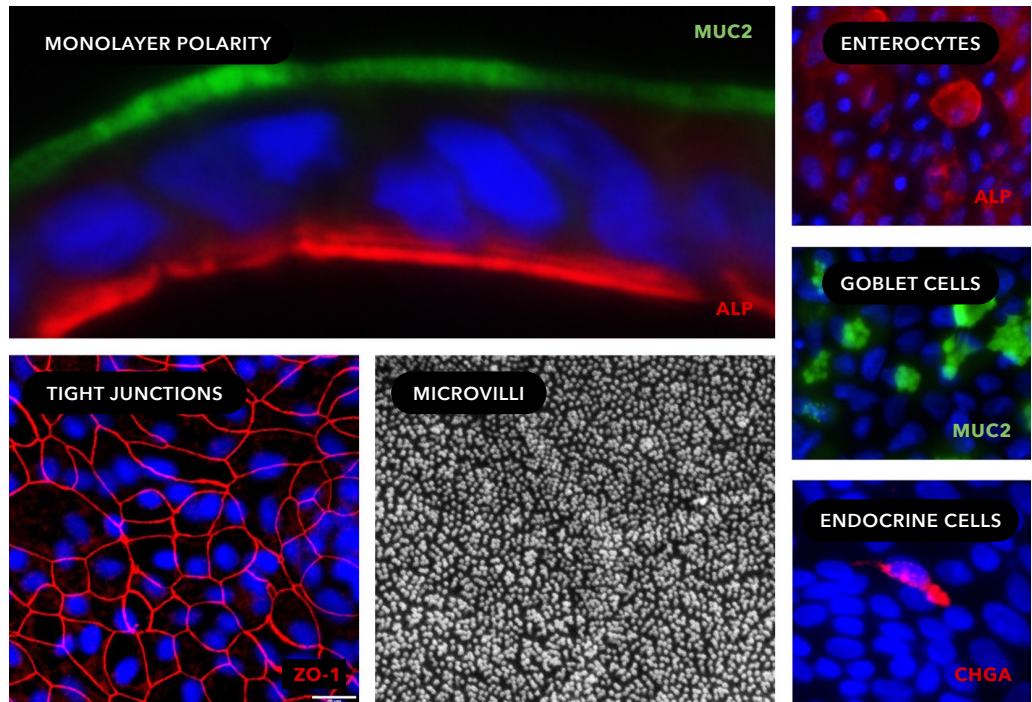
Frozen Biobank

## Features

- 96-well format for compatibility with high throughput and high content applications.
- Consists of human primary stem cells capable of differentiating into all key cell types in the gut epithelium.
- Creates a confluent epithelial monolayer with tight junctions for barrier integrity and permeability studies.
- Gene expression patterns demonstrate accurate modeling of the different regions of the intestine.

RepliGut® Planar Model System consists of stem cell derived differentiated intestinal cells, self organized into a polarized monolayer with strong tight junctions to enable study of intestinal barrier physiology in a convenient *in vitro* system.

Immunostaining and electron micrographs of RepliGut® Systems showing monolayer polarity, tight junctions, functional cell types and presence of microvilli. Microvilli image courtesy of Dr. Yuli Wang, University of Washington.



## Services

Let Altis experts work with you to design and execute the right study using RepliGut® Systems:

- Barrier formation
- Barrier integrity
- Permeability
- Toxicity
- Cytokine response
- Viability
- Proliferation
- Gene expression

## Kits

Set up the RepliGut® Planar Model in your own lab with all the components needed for successful in-house implementation:

- Region-specific stem cells
- Hydrogel coated plates
- Expansion media
- Differentiation media
- Cell disruption media
- Detailed instructions
- Technical consulting

### DONORS

An ethically sourced biobank consisting of multiple intestinal regions from multiple donors allows for both cross-region and cross-donor studies.

### INFLAMMATION MODELING

RepliGut® System responds as expected with dose-dependent reduced barrier integrity when exposed to pro-inflammatory cytokines.



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