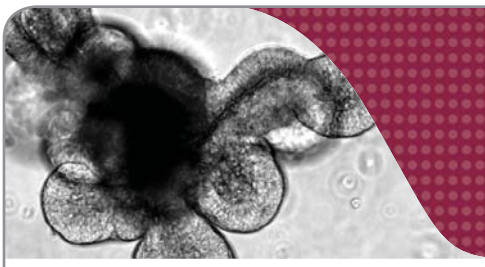

IntestiCult™ Organoid Growth Medium (Mouse)

Robust Growth of Mouse Intestinal Epithelial Organoids

Intestinal Epithelial Organoids

Intestinal epithelial organoids are three-dimensional structures of cultured intestinal cells that incorporate many key features of the in vivo intestinal epithelium, including a crypt-villus structure that surrounds a functional central lumen. Intestinal organoids incorporate all of the known cell types found in the adult intestinal epithelium, including intestinal stem cells, paneth cells, goblet cells, enteroendocrine cells and enterocytes. This 3D culture system provides a convenient and physiologically relevant model for investigating intestinal biology and the properties of adult stem cells.

IntestiCult™ Organoid Growth Medium (Mouse) is the first-ever complete and defined mouse intestinal organoid growth medium, enabling researchers to easily and reproducibly generate experiment-ready organoids in five to seven days (Figure 1). IntestiCult™ supports efficient establishment, expansion and long-term maintenance of mouse intestinal epithelial organoids (Figure 2).

Challenges in Intestinal Research

Studying the intestinal epithelium can pose multiple challenges. In vitro models of the intestine, such as monolayer cultures using intestinal cell lines, are convenient systems to investigate the impact of specific variables on intestinal cells, but lack many key structural similarities and the cellular hierarchy found in the in vivo epithelium. Furthermore, immortalization of these cell lines can lead to functionally significant genetic differences between the cell lines being assayed and the source tissue. In vivo mouse models have the advantage of direct experimentation on the intact intestine, but are restrictive in the ability to isolate effects related to the intestinal epithelium, can be expensive to run, and are not easily replicated in a human system. Intestinal organoid culture is a powerful research tool that enables researchers to address many of these challenges.

IntestiCult™ Organoid Growth Medium (Mouse)

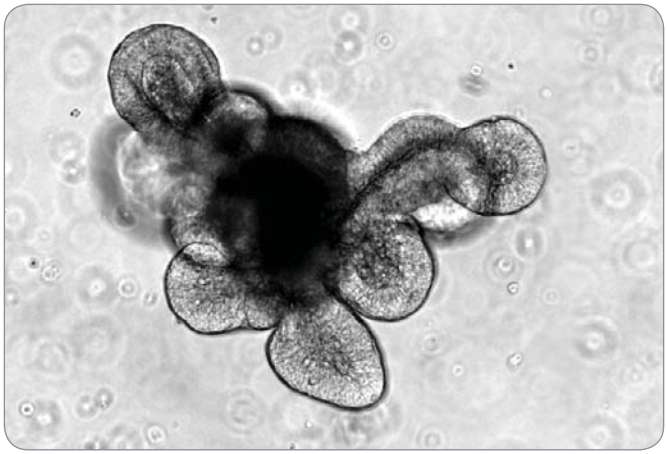

Figure 1. Light microscope visualization of a mouse intestinal epithelial organoid after 5 days of culture.

IntestiCult™ Organoid Growth Medium (Mouse):

- is a complete, defined, and serum-free formulation
- supports efficient establishment of organoids from mouse intestinal crypts
- enables convenient and reproducible generation of organoids in less than one week
- has a simple format with an easy-to-follow protocol
- supports long-term survival, propagation and differentiation of LGR5$^+$ stem cells to all known intestinal epithelial cell types

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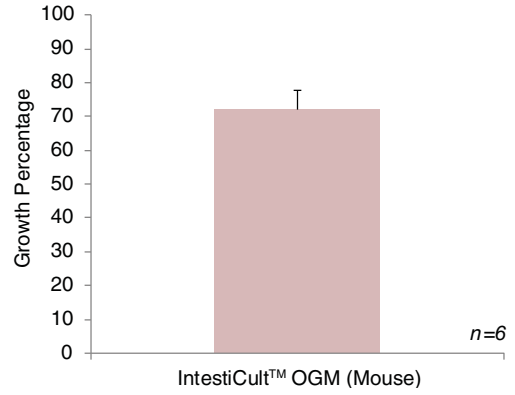
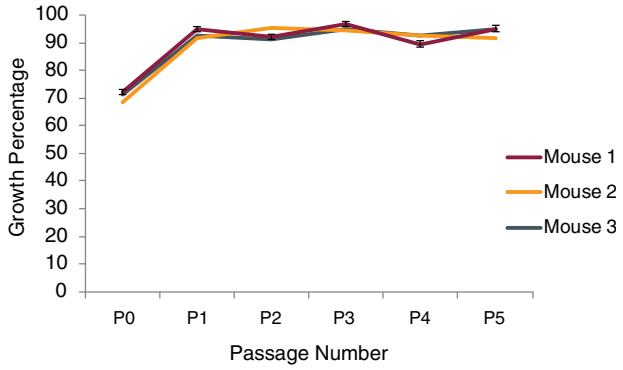
IntestiCult™ Organoid Growth Medium (Mouse)

Robust Growth of Mouse Intestinal Epithelial Organoids

A **Growth Percentage**



B **Passaging Efficiency**



C **Organoid Expansion**

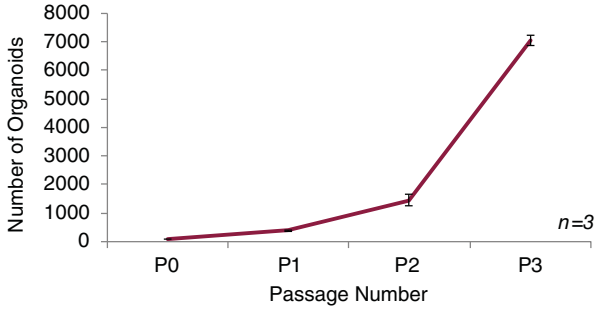


Figure 2.

A. IntestiCult™ Organoid Growth Medium (Mouse) supports efficient establishment of organoids from freshly isolated mouse intestinal crypts, with a growth percentage (number of organoids per number of crypts seeded) of 71.9% ± 6% (mean ± SD).

B. Established organoids can be expanded efficiently over an indefinite number of passages. After Passage 0 (P0), growth percentage is >90%.

C. Starting from a single well containing 100 organoids and passaging at a 1:4 split ratio, organoid count increases on an average of 4.2 fold per passage.

Product Information

PRODUCT	QUANTITY	CATALOG #
IntestiCult™ Organoid Growth Medium (Mouse)	1 Kit (100 mL Complete Medium)	06005
Gentle Cell Dissociation Reagent	100 mL	07174
DMEM/F-12 with 15 mM HEPES	500 mL	36254
Matrigel® GFR Basement Membrane Matrix	5 mL	(Corning®) 356230
Costar® 24 Well Clear Not Treated Multiple Well Plates, Bulk Pack, Sterile	100 plates	(Corning®) 3738

Intestinal Organoid Research Applications

- Intestinal Stem Cell Biology
- Intestinal Disease
- Adult Stem Cell Biology
- Gene Therapy
- Drug Screening

VIDEO

Learn more about intestinal organoid culture and IntestiCult™ by scanning the QR code or visiting **www.stemcell.com/IntestiCult_Video**