

# STEMdiff™ Intestinal Organoid Kit



**Serum-free medium system for establishment and maintenance of human intestinal organoids from hPSCs**

Catalog #05140            1 Kit  
Catalog #05145            1 Kit

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## Product Description

STEMdiff™ Intestinal Organoid Kit (Catalog #05140) is a serum-free cell culture medium system that enables robust and efficient generation of human pluripotent stem cell (hPSC)-derived intestinal organoids in a simple, three-stage protocol. Using this kit, hPSCs are directed through induction of definitive endoderm, mid-/hindgut spheroids, and generation of intestinal organoids that can be maintained long-term through passaging or cryopreserved. The organoids exhibit a cellular composition and organization that models the developing intestinal epithelium and associated mesenchyme, making them a convenient model system with direct relevance to the developing intestine. STEMdiff™ Intestinal Organoid Kit is based on the formulation published by Spence et al.<sup>1</sup> and has been optimized to increase efficiency and reproducibility of organoid formation and expansion across hPSC lines. Human intestinal organoids can be used as a model system for studying intestinal development and cell biology, intestinal inflammation, intestinal regeneration, microbial interaction, disease modeling, drug discovery, and compound screening. The kit is optimized for differentiation of cells maintained in mTeSR™1, mTeSR™ Plus, or TeSR™-AOF.

For extended culture and passaging, the kit components required for organoid maintenance can be purchased as STEMdiff™ Intestinal Organoid Growth Medium (Catalog #05145).

## Ordering Information

PRODUCT NAME	CATALOG #	SIZE	KIT COMPONENTS
STEMdiff™ Intestinal Organoid Kit	05140	1 Kit	<ul style="list-style-type: none"><li>• STEMdiff™ Endoderm Basal Medium</li><li>• STEMdiff™ Definitive Endoderm Supplement CJ (100X)</li><li>• STEMdiff™ Gastrointestinal Supplement PK</li><li>• STEMdiff™ Gastrointestinal Supplement UB</li><li>• STEMdiff™ Intestinal Organoid Basal Medium</li><li>• STEMdiff™ Intestinal Organoid Supplement</li></ul>
STEMdiff™ Intestinal Organoid Growth Medium	05145	1 Kit	<ul style="list-style-type: none"><li>• STEMdiff™ Intestinal Organoid Basal Medium</li><li>• STEMdiff™ Intestinal Organoid Supplement</li></ul>

## Component Storage and Stability

The following components are available as part of STEMdiff™ Intestinal Organoid Kit or STEMdiff™ Intestinal Organoid Growth Medium and are not available for individual sale.

COMPONENT NAME	COMPONENT #	SIZE	STORAGE	SHELF LIFE
STEMdiff™ Endoderm Basal Medium	05111	100 mL	Store at -20°C.	Stable until expiry date (EXP) on label.
STEMdiff™ Definitive Endoderm Supplement CJ (100X)	05113	1.1 mL	Store at -20°C.	Stable until expiry date (EXP) on label.
STEMdiff™ Gastrointestinal Supplement PK	05141	0.64 mL	Store at -20°C.	Stable until expiry date (EXP) on label.
STEMdiff™ Gastrointestinal Supplement UB	05142	0.64 mL	Store at -20°C.	Stable until expiry date (EXP) on label.
STEMdiff™ Intestinal Organoid Basal Medium	05143	100 mL	Store at 2 - 8°C.	Stable until expiry date (EXP) on label.
STEMdiff™ Intestinal Organoid Supplement*	05144	2 mL	Store at -20°C.	Stable until expiry date (EXP) on label.

\*This product contains material derived from human plasma. Donors have been tested and found negative for HIV-1 and -2, hepatitis B, and hepatitis C prior to donation. However, this product should be considered potentially infectious and treated in accordance with universal handling precautions.

## Directions for Use

For complete instructions, refer to the Technical Manual: Generation of Human Intestinal Organoids Using STEMdiff™ Intestinal Organoid Kit, available at [www.stemcell.com](http://www.stemcell.com), or contact us to request a copy.

## Related Products

For related products, including specialized cell culture and storage media, matrices, antibodies, cytokines, and small molecules, visit [www.stemcell.com/endodermdiff](http://www.stemcell.com/endodermdiff), or contact us at [techsupport@stemcell.com](mailto:techsupport@stemcell.com).

## References

1. Spence JR et al. (2011) Directed differentiation of human pluripotent stem cells into intestinal tissue in vitro. *Nature* 470(7332): 105–9.

STEMdiff™ Intestinal Organoid Kit was developed under license to intellectual property owned by the Cincinnati Children's Hospital.

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