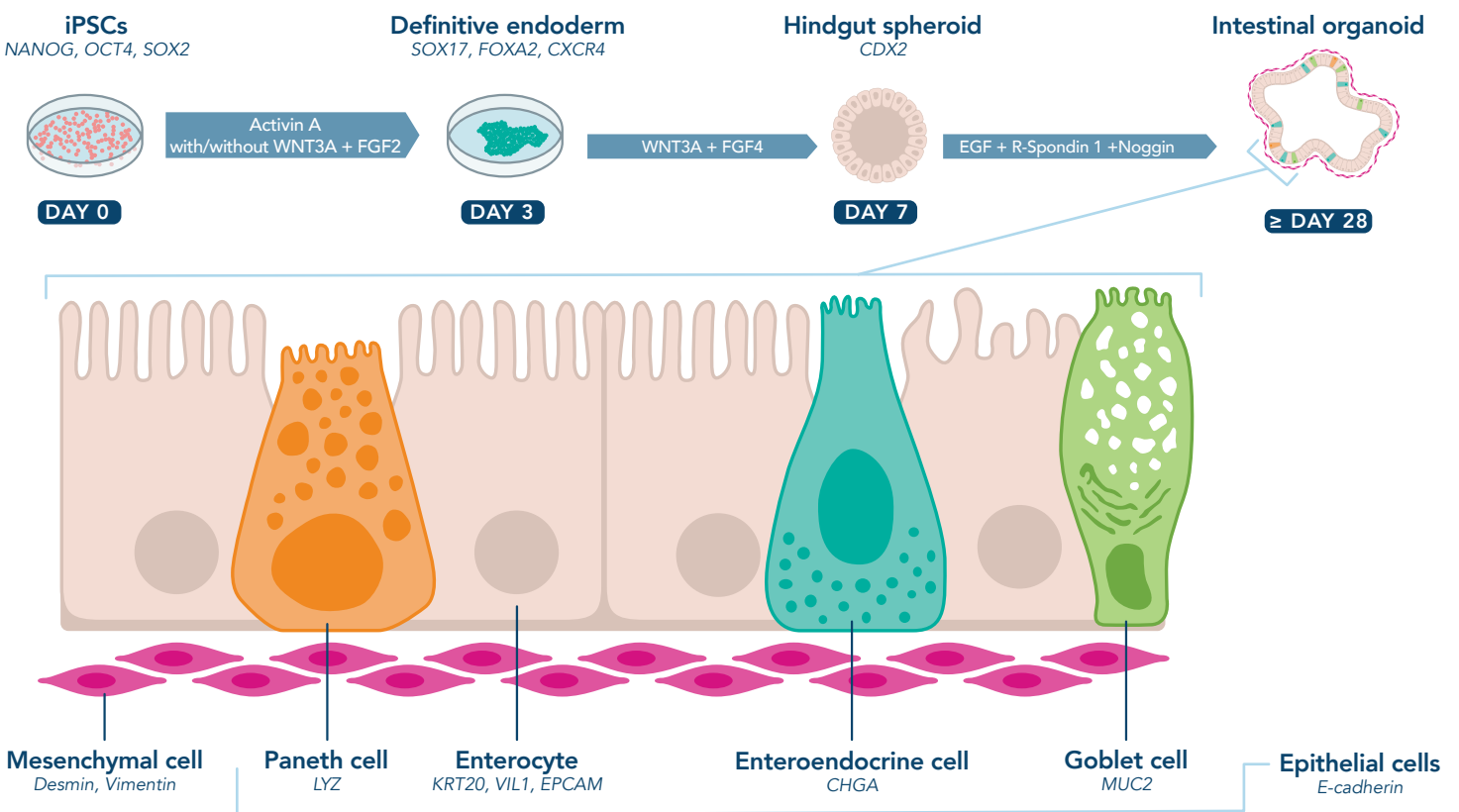


iPSC Derived Human Intestinal Organoids

iPSC derived human intestinal organoids recapitulate original intestinal tissue structure and function, therefore serving as valuable tools for various applications including studies

on gastrointestinal biology, human disease modeling, and high-throughput screening of potential drug candidates.



- Human iPSCs are differentiated into definitive endoderm (DE) by treating with Activin A for 3 days.
- Addition of WNT3A and FGF2 during DE differentiation has been reported to enhance organoid formation efficiency.
- Formation of hindgut spheroids is induced by WNT3A and FGF4 treatment of DE cells for up to 4 days.
- Three-dimensional spheroids are cultured in the presence of EGF, R-Spondin 1, and Noggin resulting in their differentiation into intestinal organoids.
- Intestinal organoids are characterized by the presence of mesenchymal cells as well as all major intestinal epithelial cell types including enterocytes, Paneth cells, enteroendocrine cells, and goblet cells.

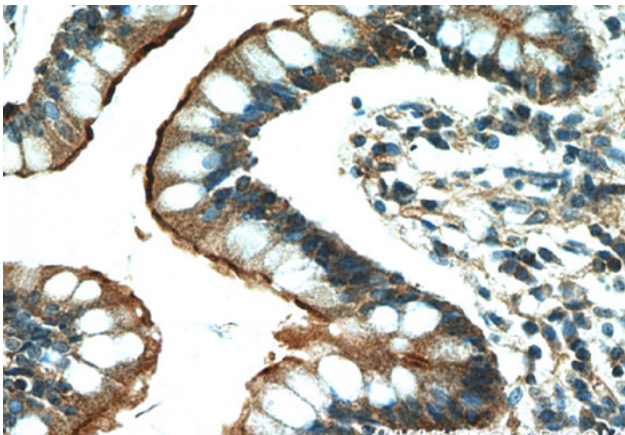
Note: Markers for different cell types are indicated in the above figure and the product table on the next page.

Humankine[®] Recombinant Growth Factors for Intestinal Organoid Culture

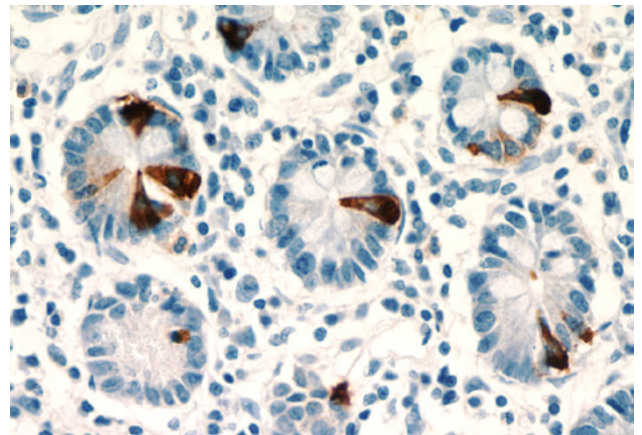
Recombinant Protein	Catalogue No.	Species Reactivity	Activity (EC50)	Purity
Activin A	HZ-1138	Human, Mouse	0.5-3.5 ng/mL	> 95%
EGF	HZ-1326	Human	0.025-0.125 n/mL	> 95%
FGF2	HZ-1285	Human, Mouse	0.05-0.4 ng/mL	>95%
FGF4	HZ-1218	Human, Mouse	5 1.25 ng/mL	>95%
Noggin	HZ-1118	Human, Mouse	1.5-15 ng/mL	>95%
R-Spondin 1	HZ-1328	Human	4-20 ng/mL	>95%
WNT3A	HZ-1296	Human, Mouse	2-17 ng/mL	>90%

Antibodies for Intestinal Organoid Culture

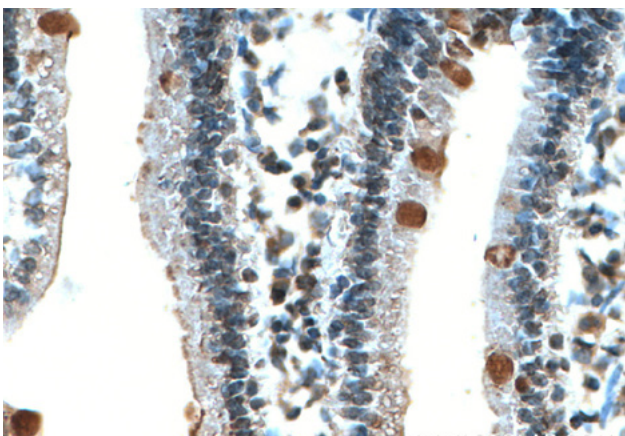
	Target	Catalogue No.	Species Reactivity	Clonality	Applications
iPSC Markers	NANOG	14295-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IHC, IF, FC, ELISA
	OCT4	11263-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IF, FC, ELISA
	SOX2	11064-1-AP	Human, Mouse, Rat, Zebrafish	Rabbit Polyclonal	WB, IHC, IF, FC, ELISA
Definitive Endoderm Markers	SOX17	24903-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IF, ELISA
	FOXA2	22474-1-AP	Human	Rabbit Polyclonal	WB, IP, IHC, IF, ChIP, ELISA
	CXCR4	60042-1-Ig	Human, Mouse	Mouse Monoclonal	WB, IHC, IF, FC, CoIP, ELISA
Hindgut Marker	CDX2	60243-1-Ig	Human, Mouse, Rat, Pig	Mouse Monoclonal	WB, IF, ELISA
Epithelial Markers for Intestinal Organoids	E-cadherin	20874-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IP, IHC, IF, FC, CoIP, ELISA
	KRT20	17329-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IHC, IF, ELISA
	VIL1	16488-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IP, IHC, IF, FC
	EPCAM	21050-1-AP	Human, Mouse	Rabbit Polyclonal	WB, IHC, IF, FC, ChIP, ELISA
	LYZ	15013-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IHC, IF
	CHGA	23342-1-AP	Human, Mouse	Rabbit Polyclonal	WB, IHC, ELISA
	MUC2	27675-1-AP	Human, Mosquito, Mouse, Pig	Rabbit Polyclonal	WB, IHC, IF, ELISA
Mesenchymal Markers for Intestinal Organoids	Desmin	16520-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IP, IHC, IF, FC, ELISA
	Vimentin	10366-1-AP	Human, Mouse, Rat	Rabbit Polyclonal	WB, IP, IHC, IF, FC, CoIP, ELISA
Proliferation Marker	KI67	27309-1-AP	Human	Rabbit Polyclonal	IHC, IF, FC, ELISA



Immunohistochemical analysis of paraffin-embedded human small intestine using VIL1 antibody (16488-1-AP) at dilution of 1:5000 (under 40x lens). VIL1 is a marker for intestinal enterocytes.



Immunohistochemical analysis of paraffin-embedded human small intestine using CHGA antibody (23342-1-AP) at dilution of 1:800 (under 40x lens). CHGA is a marker for intestinal enteroendocrine cells.



Immunohistochemical analysis of paraffin-embedded mouse small intestine using MUC2 antibody (27675-1-AP) at dilution of 1:2000 (under 40x lens). MUC2 is a marker for intestinal goblet cells.



Immunofluorescence analysis of FFPE adult mouse small intestine using E-cadherin antibody (white, 20874-1-AP5), LYVE1 antibody (green), and alpha-smooth muscle actin antibody (red). E-cadherin is a marker for intestinal epithelial cells.