

## bioGenous™ Human Liver Ductal (Differentiation) Organoid Kit(Serum-free)

Catalog: K2008-HLH

### Product Description:

bioGenous™ Human Liver Ductal Organoid Kit is a serum-free cell culture medium for establishment and maintenance of human liver ductal organoids(hLDs) derived from adult stem cells. Self-renewal of the liver ductal epithelium is driven by the proliferation of stem cells and their progenitors located in liver. hLDs display all hallmarks of the liver ductal epithelium in terms of architecture, cell type composition, and self-renewal dynamics, therefore hold great promise for unprecedented studies of Human liver development and disease, hLDs could differentiate into hepatocyte like cell under the induction of differentiation medium.

### Product Information:

Component	Component Cat#	Volume	Storage& Stability
bioGenous™ Human Liver Ductal Organoid Basal Medium (Differentiation)	K2008-HLH –A100/A500	100mL/500mL	4°C, 12 months
bioGenous™ Human Liver Ductal Organoid Supplement B(50x) (Differentiation)	K2008-HLH –B100/B500	2mL/10mL	-20°C, avoid repeated freeze-thaw cycles, 12 months
bioGenous™ Human Liver Ductal Organoid Supplement C(250x) (Differentiation)	K2008-HLH –C100/C500	0.4mL/2mL	-20°C, avoid repeated freeze-thaw cycles, 12 months
bioGenous™ Human Liver Ductal Organoid Supplement D(250x) (Differentiation)	K2008-HLH –D100/D500	0.2mL/1mL	-20°C, avoid repeated freeze-thaw cycles, 12 months

### Materials & Reagents Required But Not Included:

Vender	Materials	Catalog#
bioGenous™	Primary Tissue Storage Solution	K601005
bioGenous™	Epithelial Organoid Basal Medium	B213151
bioGenous™	Human Liver Ductal Organoid Medium (Expansion)	K2008-HLD
bioGenous™	Organoid Dissociation Solution	E238001
bioGenous™	Tissue Digestion Solution	K601008
bioGenous™	Anti-Adherence Rinsing Kit	E238002
bioGenous™	Organoid Cryopreservation Medium (Serum Free)	E238023
bioGenous™	bioGenous™ Organoid Culture ECM (Reduced Growth Factor)	M315066
	DPBS (1X), liquid, contains no calcium or magnesium	-
	Fetal Bovine Serum (FBS)	-

### Preparation of Human Liver Ductal Organoid Differentiation Medium

Use sterile technique to prepare the Human Liver Ductal Organoid Differentiation Medium I . hLDs grown in Human Liver Ductal Organoid Expansion Medium overwhelmingly consisted of cholangiocytes. After changing the Expansion Medium to differentiation medium, the hLDs could differentiate into hepatocyte like cells, which display the markers of hepatocytes, including *ALBUMIN*, *TTR* and *CYP3A4*. The following examples are for preparing 10 mL of Differentiation I Medium and Differentiation II Medium. If preparing other volumes, adjust accordingly.

1. Thaw Human Liver Ductal Organoid Supplement B (50x) (Differentiation), Human Liver Ductal Organoid Supplement C (250x) (Differentiation) and Human Liver Ductal Organoid Supplement D (250x) (Differentiation) on ice.

**NOTE:** Once thawed, use immediately or aliquot and store at -20°C for not more than 10 months. After thawing the aliquots, use immediately. Do not re-freeze.

2. For Human Liver Ductal Organoid Differentiation Medium. Add 40 µL Human Liver Ductal Organoid Supplement D (250x) (Differentiation) to 10 mL Human Liver Ductal Organoid Medium(Expansion) (K2008-HLD). Mix thoroughly.
3. For Human Liver Ductal Organoid Differentiation Medium II. Add 200 µL Human Liver Ductal Organoid Supplement B (50x) (Differentiation) and 40 µL Human Liver Ductal Organoid Supplement C (250x) (Differentiation) to 10 mL Human Liver Ductal Organoid Basal Medium (Differentiation). Mix thoroughly.

**NOTE:** If not use immediately, store complete medium at 2-8°C for not more than 2 weeks. bioGenous™ Human Liver Ductal Organoid Supplement B (Differentiation) contains fungicide and antibiotics(50x).

## Protocol for Human Liver Ductal Organoids Differentiation

1. Culture the human liver ductal organoids in differentiation medium I after seeding for 5 days.
2. Change the medium to Human Liver Ductal Organoid Differentiation Medium II, and culture for 10 days. During this period, replace the medium every 3 days.
3. At the end of this period, the differentiation process is completed. The liver ductal organoid would differentiate into hepatocyte-like organoid with the expression of hepatic markers, such as ALBUMIN, TTR, CYP3A4 and MRP2.

Last updated on 29<sup>th</sup> November, 2022