

## bioGenous™ Mouse Liver Ductal Organoid Kit (Differentiation)

Catalog: K2006-MLH

### Product Description:

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

### Product Information:

Component	Catalog#	Volume	Storage& Stability
bioGenous™ Mouse Liver Ductal Organoid Basal Medium (Differentiation)	K2006-MLH –A100/A500	100mL/500mL	4°C, 12 months
bioGenous™ Mouse Liver Ductal Organoid Supplement B(50x) (Differentiation)	K2006-MLH –B100/B500	2mL/10mL	-20°C, avoid repeated freeze-thaw cycles, 12 months
bioGenous™ Mouse Liver Ductal Organoid Supplement C(250x) (Differentiation)	K2006-MLH –C100/C500	0.4mL/2mL	-20°C, avoid repeated freeze-thaw cycles, 12 months
bioGenous™ Mouse Liver Ductal Organoid Supplement D(1000x) (Differentiation)	K2006-MLH –D100/D500	0.05mL/0.25mL	-20°C, avoid repeated freeze-thaw cycles, 12 months

### Materials & Reagents Required But Not Included:

Manufacturer	Materials	Catalog#
bioGenous™	Primary Tissue Storage Solution	K601005
bioGenous™	Epithelial Organoid Basal Medium	B213151
bioGenous™	Mouse Liver Ductal Organoid Medium (Expansion)	K2006-MLD
bioGenous™	Organoid Dissociation Solution	E238001
bioGenous™	Tissue Digestion Solution	K601008
bioGenous™	Anti-Adherence Rinsing Kit	E238002
bioGenous™	Organoid Cryopreservation Medium (Serum Free)	E238023
bioGenous™	Organoid Culture ECM (Reduced Growth Factor)	M315066
	DPBS (1X), liquid, contains no calcium or magnesium	-
	Fetal Bovine Serum (FBS)	-

### Preparation of Mouse Liver Ductal Organoid Differentiation Medium

Use the sterile technique to prepare the mouse liver ductal organoid differentiation medium. mLDs grown in Mouse Liver Ductal Organoid Expansion Medium overwhelmingly consisted of cholangiocytes. After changing the Expansion Medium to the differentiation medium, the mLDs could differentiate into hepatocyte-like cells, which display the markers of hepatocytes, including Albumin, Ttr, Cyp3a11 and Mup20. The following examples are for preparing 10 mL of Differentiation I Medium and Differentiation II Medium. If preparing other volumes, adjust accordingly.

1. Thaw Mouse Liver Ductal Organoid Supplement B(50x) (Differentiation), Mouse Liver Ductal Organoid Supplement C(250x) (Differentiation) and Mouse Liver Ductal Organoid Supplement D (1000x) (Differentiation) on ice.  
**NOTE:** Once thawed, use immediately or aliquot and store at -20°C for no more than 10 months. After thawing the aliquots, use immediately. Do not re-freeze.
2. For Mouse Liver Ductal Organoid Differentiation Medium I. Add 200 µL Mouse Liver Ductal Organoid Supplement B (50x) (Differentiation), 40 µL Mouse Liver Ductal Organoid Supplement C (250x) (Differentiation) to 10 mL Mouse Liver Ductal Organoid Basal Medium (Differentiation). Mix thoroughly.
3. For Mouse Liver Ductal Organoid Differentiation Medium II. Add 200 µL Mouse Liver Ductal Organoid Supplement B (50x) (Differentiation) and 40 µL Mouse Liver Ductal Organoid Supplement C(250x) (Differentiation) and 10 µL Mouse Liver Ductal Organoid Supplement D (1000x) (Differentiation) to 10 mL Mouse Liver Ductal Organoid Basal Medium (Differentiation). Mix thoroughly.

**NOTE:** If not used immediately, store the complete medium at 2-8°C for no more than 2 weeks. bioGenous™ MouseLiver Ductal Organoid Supplement B (Differentiation) contains fungicides and antibiotics (50x).

## Protocol for Mouse Liver Ductal Organoids Differentiation

1. Culture the mouse ductal organoids in Mouse Liver Ductal Organoid Medium (Expansion) (K2006-MLD) for at least 3 days.
2. Change the medium to Mouse Liver Ductal Organoid Differentiation Medium I and culture for 9 days. During this period, replace the medium every day.
3. Change the medium to Mouse Liver Ductal Organoid Differentiation Medium II and culture for 3 days. During this period, replace the medium every day.
4. At the end of this period, the differentiation process is completed. The ductal organoid would differentiate into a hepatocyte-like organoid with the expression of hepatic markers, such as Albumin, Ttr, Cyp3a11, and Mup20.

Last updated on 26<sup>th</sup> October 2022