# Introduction to Human HepatiCult<sup>™</sup> and Related Workflows

## Lecture 2

#### Presenter

Kiran Bhullar Scientist, Scientific Support, Epithelial Cell Biology





## **Learning Objectives**

After this session, you should be familiar with:

- STEMCELL Technologies' hepatic product portfolio ۰
- chnologies Human hepatic organoid workflows and protocols using HepatiCult™ ٠

roperty



#### **Outline**

- 1. Introduction to Hepatic Products at STEMCELL Technologies
- 2. Introduction to Human HepatiCult™
- Property of Stern Ctill 3. Human HepatiCult<sup>™</sup> Organoid Workflows



z echnologies

#### Section 1 | Introduction to Hepatic Products at STEMCELL Technologies



#### **Hepatic Product Portfolio**





STEMACEL' STEMACEL'					
STEMCELL STEMCE					
	STEMCELL" Hitter Hander Gardoolling Hand	5115 5750	STEMCEL	5 -	STEMCELL'

Product Name	HepatiCult™ Organoid Kit (Human)	HepatiCult™ Organoid Growth Medium (Mouse)	Mouse Hepatic Organoids	STEMdiff™ Hepatocyte Kit
Recommended For	Reliable initiation, growth, and differentiation of human hepatic organoids	Robust establishment and maintenance of mouse hepatic progenitor organoids	Convenient establishment and standardization of hepatic organoid cultures from frozen mouse hepatic progenitor organoid segments	Directed differentiation of human pluripotent stem cells (hPSCs) to generate hepatocyte-like cells (HLCs) that are compatible with PSC-derived hepatic organoid generation
Species	Human	Mouse	Mouse	Human
For Use With	<ul> <li>Primary human liver tissue-derived ductal material</li> <li>Compatible with primary rat and pig liver-tissue derived ductal material</li> <li>Cryopreserved hepatic organoids</li> <li>Downstream establishment and culture of PSC-derived hepatic organoids</li> </ul>	<ul> <li>Primary liver tissue-derived ductal material</li> <li>Cryopreserved hepatic organoids</li> </ul>	HepatiCult™ Organoid Growth Medium (Mouse)	hPSC lines
	O <sup>t</sup> Oz			

TRANSPORT



#### Section 2 | Introduction to Human HepatiCult™



#### **Product Overview**

#### HepatiCult<sup>™</sup> Organoid Kit (Human)

The HepatiCult<sup>™</sup> Organoid Kit supports a complete workflow, with 3 media used for:

• Organoid establishment from fresh or frozen tissue

roperty

- Long-term **expansion** of fresh or cryopreserved organoids
- Differentiation to generate mature hepatic organoids







Note: each medium can also be purchased separately

### **Product Recommendations/Guidelines**

Product Recommendations/Guidelines							
		Experimental Goal					
		Organoid Initiation	Organoid Expansion	Organoid Differentiation			
Starting Material	Human Liver Tissue (fresh or cryopreserved)	Recommended: HepatiCult™ Organoid Initiation Medium (#100-0384) Serum-Free (Optional): HepatiCult™ Organoid Growth Medium (#100-0385)	HepatiCult™ Organoid Growth Medium (#100-0385)	HepatiCult™ Organoid Kit (#100-0386)			
	Established Liver Organoids (in culture or cryopreserved)	N/A	HepatiCult™ Organoid Growth Medium (#100-0385)	HepatiCult™ Organoid Differentiation Medium (#100-0383)			
	Propert.						



#### Section 3 | Human HepatiCult<sup>™</sup> Organoid Workflows







# HepatiCult<sup>™</sup>: Providing Experimental Flexibility for Downstream Applications



13



#### **Summary**

- **HepatiCult™ workflow** includes organoid establishment, long-term expansion, and differentiation
- Hepatic organoids cultured in HepatiCult<sup>™</sup> OGM can be **cryopreserved** for later use
- Hepatic organoids can be **adapted to a range of culture protocols**, including:
  - 2D monolayer (for improved access to all cell surfaces)
  - Suspension cultures
  - High-throughput assays
  - Single cell culture



