TheWell BIOSCIENCE

Growing Cells in New Dimensions

Product Data Sheet

Revision v1.7

Catalog Numbers:
VHM04-K
VHM04-1
VHM04-2
VHM04-3
VHM04-4

VitroGel® ORGANOID

Usage restrictions: For Research Use Only. Not For Use In Diagnostic Procedures.

Product Description

VitroGel® ORGANOID (1-4) are xeno-free (animal origin-free) hydrogels that support the growth of patient-derived organoids or organoids developed from pluripotent stem cells (PSCs), co-culture, and PDX model. The VitroGel ORGANOID KIT includes four types of hydrogels, which were formulated with various bio-functional ligands, mechanical strengths, and biodegradability, to fulfill the needs of different organoid culture conditions.

The hydrogel is ready-to-use at room temperature, has a neutral pH, transparent, permeable, and compatible with different imaging systems. The solution transforms into a hydrogel matrix by simply mixing with the cell culture medium.

VitroGel ORGANOID hydrogels are suitable for both 3D cell culture and 2D hydrogel coating applications. The hydrogels can work together with VitroGel STEM (Cat# VHM02), a hydrogel system for 3D static suspension cultures and scale-up of human pluripotent stem cells, by transferring the stem cell spheroids from VitroGel STEM to VitroGel ORGANOID hydrogels for organoid differentiation. The key growth factors and molecules can directly mix with the hydrogel matrix or add on the top of the hydrogel. Organoids cultured in this system can be easily harvested out with our VitroGel Cell Recovery Solution.

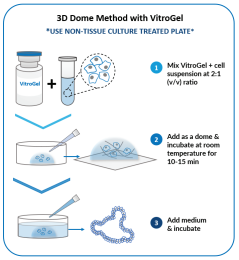
VitroGel ORGANOID hydrogels provide a well-defined 3D microenvironment for the future of personalized medicine.

SPECIFICATIONS	
Formulation	Xeno-free. Polysaccharide based functional hydrogel
Use	Organoid culture
Operation	Ready-to-use at room temperature
Biocompatibility	Biocompatible, safe for animal studies
Injection	Injectable hydrogel for *in vivo* studies and laboratory automation
Cell Harvesting	Use **VitroGel® Cell Recovery Solution** (Cat# MS03-100)
pH	Neutral
Storage	Store at 2-8°C. Ships at ambient temperature.
Stability	24 months from date of manufacture.
Uses	10 mL: 600 uses at 25 µL per dome 300 uses at 50 µL/test 2 mL: 120 uses at 25 µL per dome 60 uses at 50 µL/test

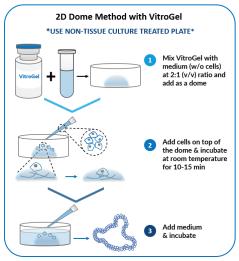
VitroGel ORGANOID hydrogels are ready-to-use. Just mix with your cells. There is no cross-linking agent or the need to adjust the hydrogel concentration. Simple 20 minute protocol.

PROTOCOL

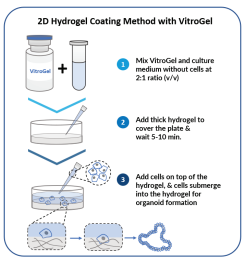
VitroGel ORGANOID system can culture organoids in variety of culture methods:



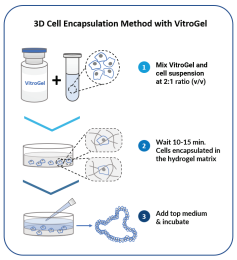
3D Dome



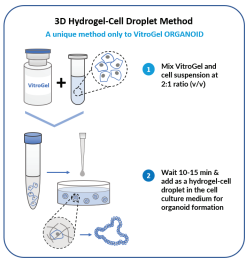
2D Dome



2D Hydrogel Coating



3D Cell Culture Encapsulation



Hydrogel-Cell Droplet
A unique method only to VitroGel ORGANOID

Please review which VitroGel ORGANOID protocol methods and choose the one that fits your project best.

Full protocol and video demonstrations can be found at > **www.thewellbio.com/protocols**

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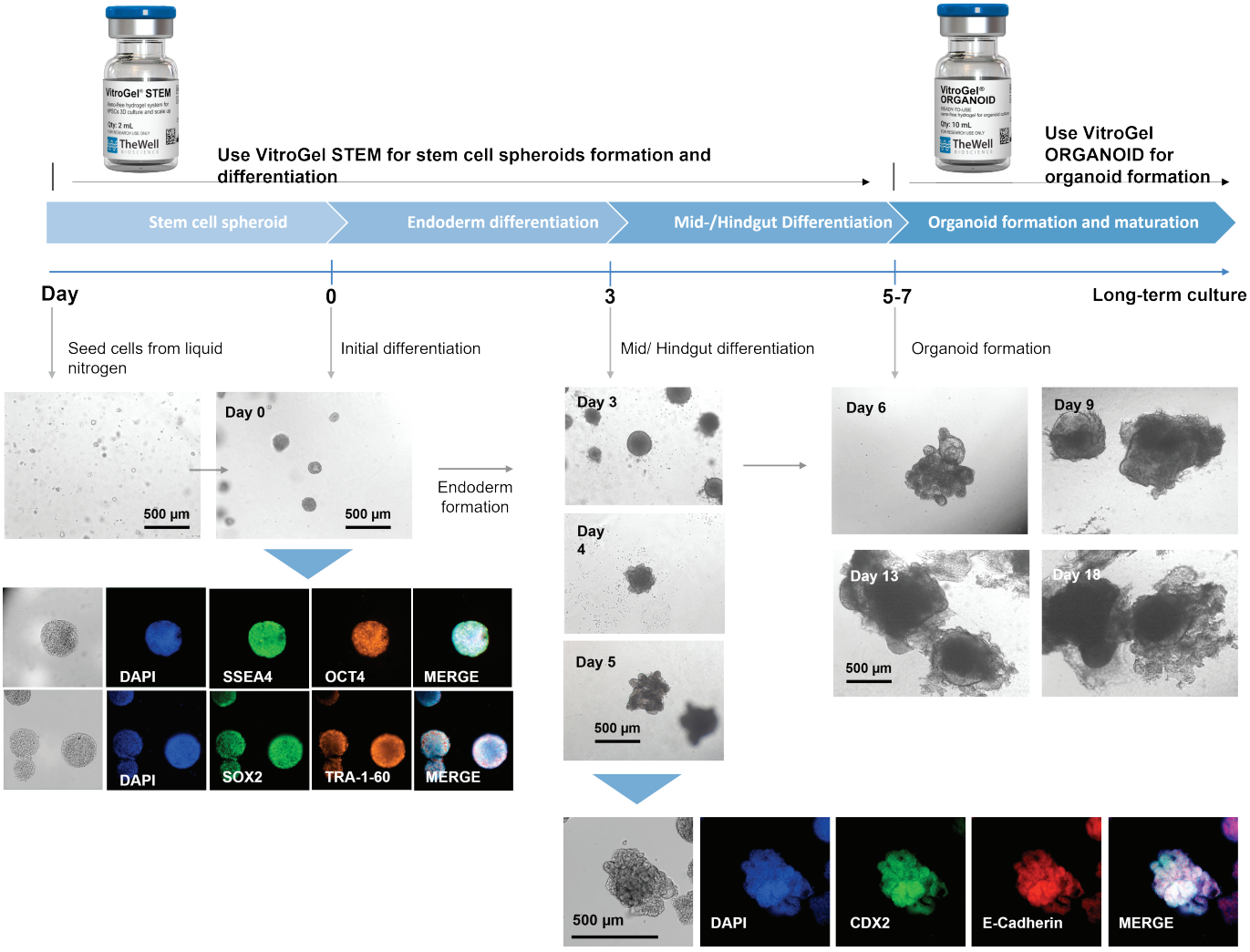
Complete Xeno-free 3D Organoid Culture with VitroGel® STEM and VitroGel® ORGANOID

Start from iPSC spheroids for stem cell differentiation and organoid formation.



Culture human intestinal organoid from stem cell spheroids.

Human iPSCs recovered from liquid nitrogen were seeded with VitroGel STEM for static suspension culture (Refer to protocol of VitroGel STEM Cat# VHM02). The high-quality stem cell spheroids formed within 3-5 days with full pluripotent properties (showing the positive markers of SSEA4, OCT4, SOX2, and TRA-1-60). The spheroids were harvested by centrifuging (100 x *g*, 3 min), and resuspended with VitroGel STEM in endoderm differentiation medium for 3 days. The endoderm cell spheroids were then harvested by centrifuging (100 x g, 3 min), and resuspended with VitroGel STEM in mid/hindgut differentiation medium for 3-4 days. The mid/hindguts were collected by centrifuging (100 x *g*, 3 min), and characterized with CDX2 and E-Cadherin. The mid/hindguts were resuspended with organoid formation medium and mixed with VitroGel ORGANOID (following the protocol of VitroGel ORGANOID) for organoid formation and long-term maturating culture.

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