

Xeno-Free STEM CELL Research Product Guide

COMPREHENSIVE GUIDE TO END-TO-END XENO-FREE
2D AND 3D CULTURE SOLUTIONS



TheWell
BIOSCIENCE

3D CELL CULTURE AND BEYOND



Start with the end in mind.

Unlock the full potential of 3D cell culture with a complete xeno-free workflow. Replace animal-derived ECM and culture media with a fully defined synthetic matrix, xeno-free media, recombinant growth factors, and engineered cultureware. VitroGel® advances New Approach Methodologies (NAMs) by providing a consistent, reproducible, and scalable platform that enables more physiologically relevant research while accelerating innovation in precision medicine, cell therapy, and biomanufacturing.

 866-3D-CELLS (973.855.4955)  info@thewellbio.com  thewellbio.com  [thewell-bioscience](https://www.linkedin.com/company/thewell-bioscience)

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Xeno-Free End-to-End Platform for **Stem Culture**



Establish 3D Models

VitroGel® Xeno-Free Hydrogels

Ready-to-use Hydrogels



VitroGel® STEM
Cat. No.: VHM02



VitroGel® ORGANOID
Cat. No.: VHM04



VitroGel® NEURON
Cat. No.: VHM07



VitroGel® MSC
Cat. No.: VHM03

RocketCell™ Xeno-Free Cell Culture Media

iPSCs



RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit

Cat. No.: RC02-CGK



RocketCell™ iPSC Xeno-Free Growth Medium

Cat. No.: RC02-GM

iPSC-Derived Organoids



RocketCell™ Organoid Xeno-Free Essential-Core Medium

Cat. No.: RC04-OCM

NSCs



RocketCell™ NSC Xeno-Free Complete Growth Kit

Cat. No.: RC01-CGK2



RocketCell™ NSC Xeno-Free Complete Growth Kit

Cat. No.: RC01-CGK1



RocketCell™ NSC Xeno-Free Growth Medium

Cat. No.: RC01-GM

MSCs



RocketCell™ hMSC Xeno-Free Complete Growth Medium

Cat. No.: RC06-GM

RocketCell™ Supplements



RocketCell™ XF Supplements

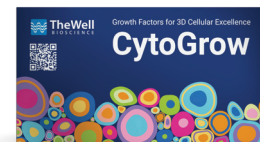
Cat. No.: RCS1
Cat. No.: RCS2
Cat. No.: RCS3



RocketCell™ Cell Viability Enhancer (1000X)

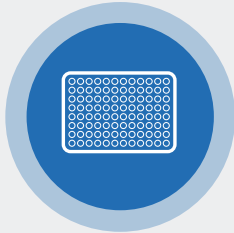
Cat. No.: RC02-CV

CytoGrow™ Premium Quality Growth Factors



Premium-grade Growth Factors At Research-friendly Price
(Over 100 types)

TheWell Bioscience offers a complete workflow from 3D model establishment to downstream analysis with lab automation capability.



3D Culture Vessels



Cell Recovery



Downstream Analysis

vitroprime



3D Culture and Imaging Plate

(6, 24, 96-well)

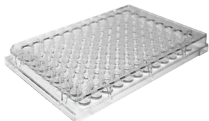
Cat. No.: VP-3D6W
Cat. No.: VP-3D24W
Cat. No.: VP-3D96W



Ultra-Low Attachment Plate

(96-well, U-Bottom)

Cat. No.: VP-ULA96U-8



Spread-Attach Plate

(6, 12, 24, 48, 96-well)

Cat. No.: VP-SA96W5



Cell Culture Inserts

(24 well; 3&8 µm)

Cat. No.: VPE8-24-4

VitroGel® Enzyme-Free Recovery Solution

3D Cell Harvesting from VitroGel® & ECM

For Quick Recovery



VitroGel® Organoid Recovery Solution

(100 & 500 mL)

Cat. No.: MS04-100, MS04-500

For Gentle Recovery



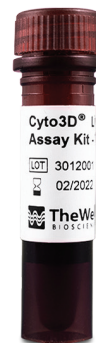
VitroGel® Cell Recovery Solution

(100 mL)

Cat. No.: MS03-100

Cyto3D®

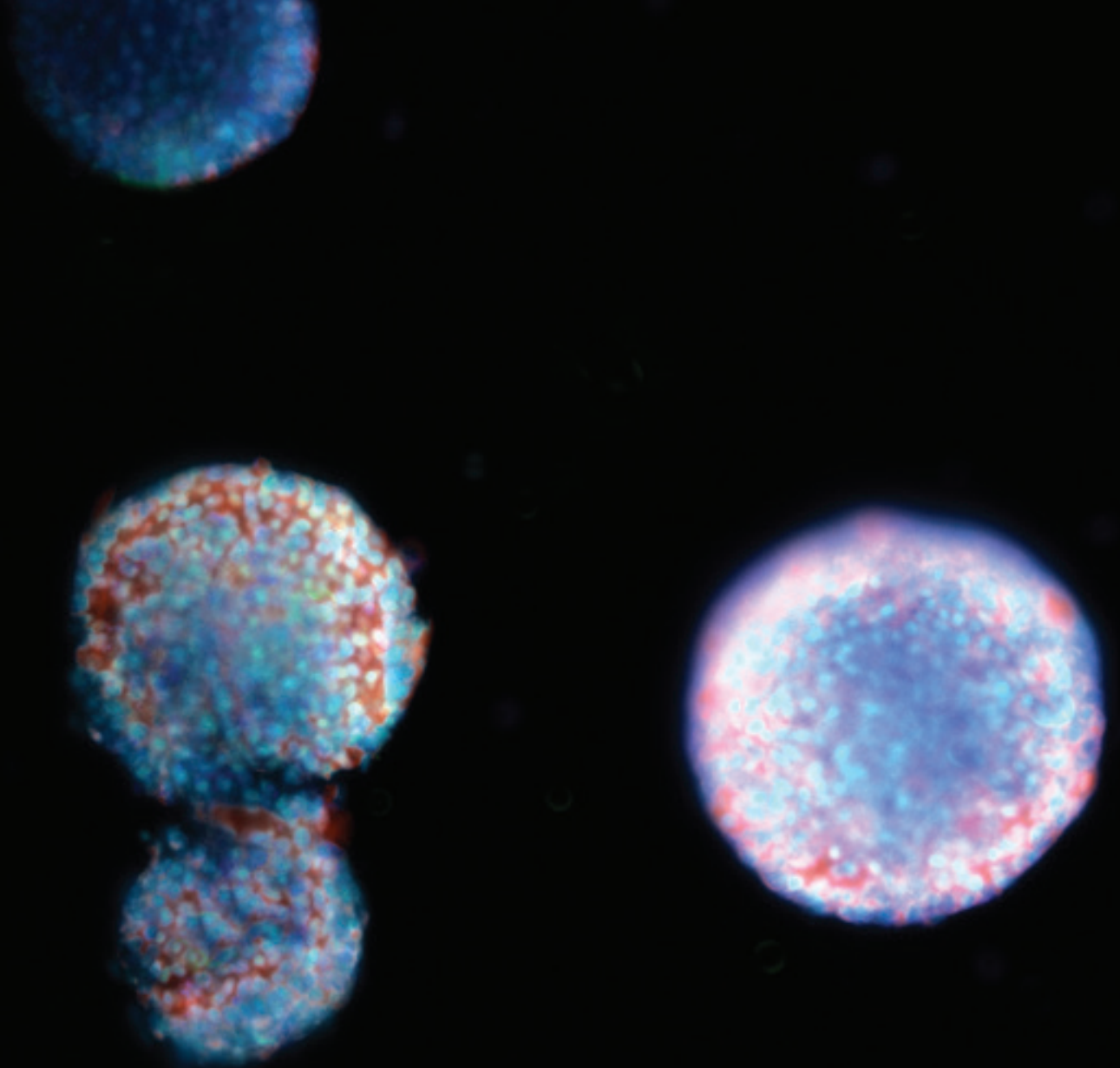
Reagent for 3D Cell Analysis



Cyto3D® Live-Dead Assay Kit

Cat. No.: BM01

2



Introduction

Stem cell culture is a fundamental technology in regenerative medicine and life science research that enables the growth, expansion, and differentiation of stem cells under controlled laboratory conditions. By providing a carefully designed microenvironment that supports cell survival and function, stem cell culture allows researchers to study developmental biology, model human diseases, screen potential therapeutics, and generate specialized cell types for tissue engineering and cell-based therapies.

Advances in culture systems, including xeno-free media and synthetic extracellular matrices, are helping create more defined, reproducible, and clinically relevant platforms for translating stem cell discoveries into real-world biomedical applications.

2.1

STEM CELL CULTURE: Why Product Quality Defines Model Consistency

Successful stem cell culture requires careful optimization of multiple interdependent parameters. From media formulation and substrate selection to passaging strategy and quality control, each variable influences cell identity, stability, and downstream performance.

WHY PRODUCT QUALITY MATTERS

GMP-Grade & Research-Grade Reagents

Pharmaceutical-grade materials are manufactured with defined specifications, rigorous QC testing, and full traceability – ensuring consistent cell identity and functionality across batches and labs.

Lot-to-Lot Consistency

Validated lots with performance-tested Certificates of Analysis (CoA) reduce experimental noise, minimize failed runs, and support multi-site reproducibility in collaborative research.

Xeno-Free & Chemically Defined Systems

Animal-component-free formulations eliminate risks from undefined factors, support clinical translation, and meet regulatory compliance requirements for GCP/GMP workflows.

Validated Quality Controls

Sterility, endotoxin, mycoplasma, and functional QC assays are performed on every lot. This independent validation is the guarantee of model reproducibility and data integrity.

KEY TAKEAWAY

Consistent stem cell models begin with consistent inputs. Investing in well-characterized, validated culture products is the most direct path to reproducible results, reduced experimental variability, and data that translates from the bench to the clinic.

To support this goal, **TheWell Bioscience offers a comprehensive end-to-end stem cell culture platform** designed to bring greater consistency and reliability to every stage of the workflow. From defined extracellular matrix solutions and specialized culture systems to optimized reagents and assay tools, the platform provides researchers with integrated products that work together to support stem cell maintenance, expansion, differentiation, and analysis.

Up to
70%


of variability in stem cell experiments is attributed to media and reagent quality.


Choosing validated, performance-tested products is not optional – it is the foundation of reproducible science.





What is VitroGel® ?

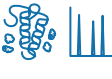
As stem cell research continues to move toward clinically relevant and reproducible culture systems, the choice of extracellular matrix becomes increasingly important. Traditional animal-derived matrices can introduce variability, undefined components, and xeno-associated risks that may impact research outcomes and translational potential. VitroGel® provides a fully synthetic, xeno-free alternative designed to create a defined and consistent microenvironment for stem cell expansion, maintenance, and differentiation and a reliable platform for developing standardized, scalable, and future-ready stem cell workflows. The following features make VitroGel® particularly well-suited for xeno-free stem cell research:


- 


Xeno-Free & Biocompatible
100% synthetic, batch-to-batch consistent; available for GMP.
- 

Room Temperature Operation
20-min protocol. Gelation is triggered by cell culture media, not temperature.
- 

Tunable
Adjust the hydrogel stiffness over a wide range.
- 

Injectable / Automation
Long-term injectability after gelation with no needle/tip clogging.
- 

Excellent for Protein Analysis
Chemically defined with no unknown proteins for more accurate analysis.
- 

Imaging Friendly
Compatible with any imaging system and downstream analysis.
- 

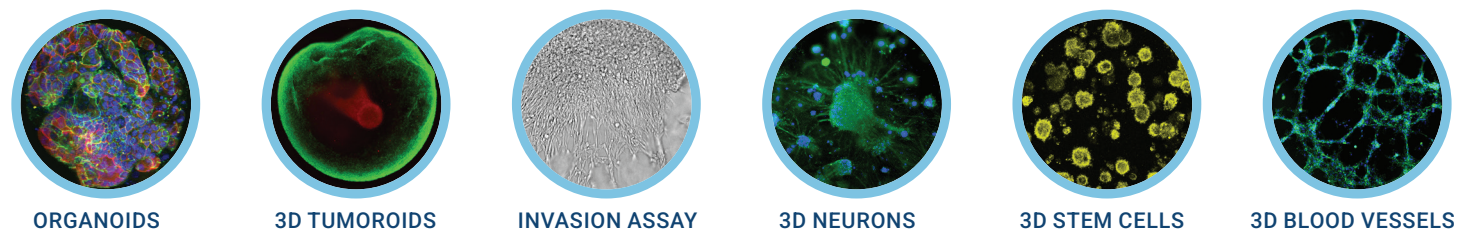
Easy Cell Harvesting
Enzyme-free cell recovery with high cell viability at 37°C.



1000+
Research Labs

500+
Cell Types Tested

400+
Publications and Growing



Learn Why VitroGel® is the leading animal-free hydrogel for 3D cell culture

thewellbio.com/news/what-is-vitro-gel-a-xeno-free-hydrogel-for-3d-cell-culture



Watch how VitroGel® provides a sustainable alternative to animal-based ECMs

www.youtube.com/watch?v=86XE1IQbn_A



Comparison of animal-based ECM vs VitroGel®

Start with the end in mind.

VitroGel® offers a defined synthetic hydrogel system that closely mimics the natural ECM environment without animal or human components. This system gives researchers control over mechanical strength, functional ligands, and degradability, allowing for the creation of precise biomimetic environments tailored for various applications in drug discovery, tissue engineering, and cell therapy.

In contrast, animal-based ECMs suffer from batch-to-batch inconsistency and contain over 2,000 undefined components, highlighting the superior consistency and defined nature of the VitroGel® system for advanced biomedical research and development.



20+ ADVANTAGES of VitroGel® over Animal-based ECM

thewellbio.com/3d-cell-culture-hydrogel/comparison-vitrogel-vs-animal-based-ecm/



Savings compared to animal-based ECM:












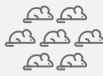
80%

Operation Time



40%

Cost per Test

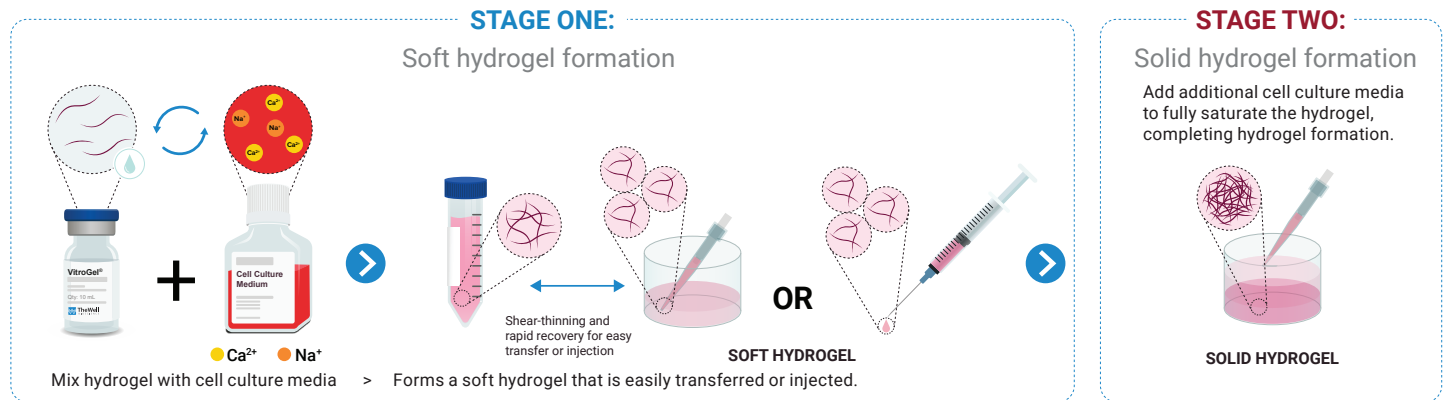
VitroGel®	ECM Feature	Animal-Based ECM
<p>Xeno-free, synthetic, biofunctionalized hydrogel with no unknown proteins.</p> 	<p>Composition</p>	 <p>ECM proteins derived from mouse tumors.</p>
<p>Ready to use. Stable at room temperature for easy handling with a simple 20-minute protocol.</p> 	<p>Operation</p>	 <p>Requires prolonged thawing (typically overnight), handling on ice, and an approximately 2-hour preparation protocol.</p>
<p>Consistent batch-to-batch performance. GMP-grade options available.</p> 	<p>GMP (Batch-to-batch consistency)</p>	 <p>Inherent batch-to-batch variability. No GMP-grade availability.</p>
<p>Retains long-term injectability after gelation without needle clogging. No need to rush for injection.</p> 	<p>Injectability</p>	 <p>Requires handling on ice to maintain injectability. Once gelation occurs, it becomes non-injectable, requiring rapid preparation and injection.</p>
<p>Fully synthetic—no animals are euthanized to produce the matrix.</p> 	<p>Ethical & Sustainable (3Rs of Animal Research)</p>	 <p>Producing one (1) vial of animal-derived matrix requires the euthanasia of approximately seven (7) mice.</p>

2.1.1.3

How Gelation Works in VitroGel® Hydrogels

Work confidently at room temperature. VitroGel® remains liquid at room temperature, and hydrogel polymerization is not temperature-dependent. Instead, gelation is triggered by the ionic components in the cell culture medium, providing consistent gel formation without temperature-sensitive handling.

For a typical cell culture application, VitroGel® goes through the following two stages of the gelation process:



Learn more about How Gelation Works in VitroGel® Hydrogels:

thewellbio.com/3d-cell-culture-hydrogel/how-hydrogel-gelation-works/

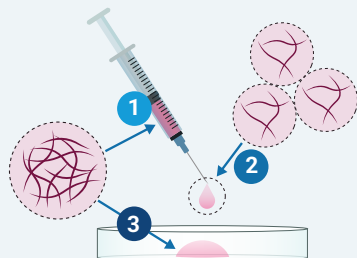
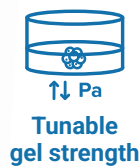


2.1.1.4

Unique Injectable Properties of VitroGel®



The unique shear-thinning and rapid recovery rheological properties of VitroGel® hydrogel system make it ideal for long-term injection and efficient cell or compound delivery. VitroGel® helps preserve cell viability, improve cell retention at the target site, and serve as an injectable carrier for cell and therapeutic delivery, making it suitable for wound healing, msc/exosome delivery, joint injection, hydrogel-cell bed formation and more.



Unique Injectable Properties of VitroGel®

1. Stable Soft Hydrogel
2. Gel-Sol Transition
3. Rapid Hydrogel Recovery



Learn more about VitroGel®'s Unique Injectable Properties:

thewellbio.com/unique-injectable-properties-of-vitrogel/

Bridging 2D and 3D Stem Cell Culture

Bridging the gap between traditional 2D culture and physiologically relevant 3D models is essential for advancing stem cell research. TheWell Bioscience's complete xeno-free workflow supports stem cells at every stage—from routine 2D expansion and maintenance to complex 3D differentiation and tissue formation. Explore how our integrated platform simplifies the transition from 2D to 3D culture in the following pages.

2D Stem Cell Culture: Building the Foundation

Two-dimensional (2D) culture remains the gold standard for stem cell expansion, maintenance, and routine characterization. In a xeno-free workflow, stem cells can be cultured on VitroPrime™ Spread-Attach Plates coated with CytoGrow™ Vitronectin or Fibronectin, while RocketCell™ Xeno-Free Growth Media provides the defined nutrients and growth factors required to support robust cell growth and maintain pluripotency. Together, these products create a reproducible, chemically defined, and animal component-free culture environment for generating healthy, high-quality stem cell populations.

While 2D culture is highly effective for cell expansion and quality control, it cannot fully replicate the complex three-dimensional microenvironment found in native tissues. Cells grown on flat surfaces exhibit limited cell-cell and cell-matrix interactions, altered morphology, and simplified signaling pathways, which can impact differentiation outcomes and physiological relevance.

To better mimic the *in vivo* environment and unlock advanced applications such as organoid formation, tissue modeling, and regenerative medicine research, stem cells can be transitioned into 3D culture systems.

Advancing to 3D Stem Cell Culture

To better replicate the native cellular microenvironment, stem cells can be transitioned from 2D monolayer culture into three-dimensional (3D) systems. Unlike flat culture surfaces, 3D matrices provide structural support and enable more natural cell-cell and cell-matrix interactions, resulting in improved cellular organization, differentiation, and physiological relevance.

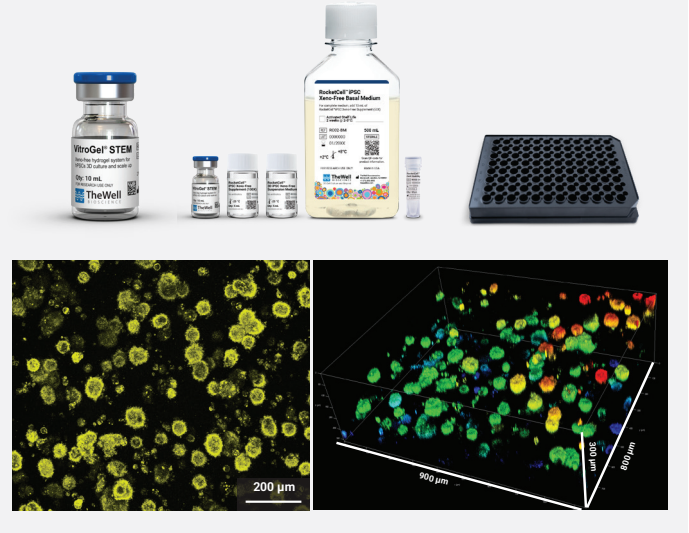
VitroGel® synthetic hydrogels offer a fully defined, xeno-free platform for 3D stem cell culture. With tunable stiffness, customizable biofunctional ligands, and easy cell encapsulation, VitroGel® allows researchers to recreate tissue-specific microenvironments that support stem cell maintenance, lineage-specific differentiation, spheroid formation, and organoid development. Combined with RocketCell™ Xeno-Free Media and CytoGrow™ growth factors, VitroGel® enables a seamless transition from 2D expansion to advanced 3D culture without introducing animal-derived components.

The result is a more predictive and reproducible culture system that bridges the gap between traditional cell culture and the complexity of human tissues, enabling applications in disease modeling, regenerative medicine, drug discovery, and translational research.

2D Cell Culture

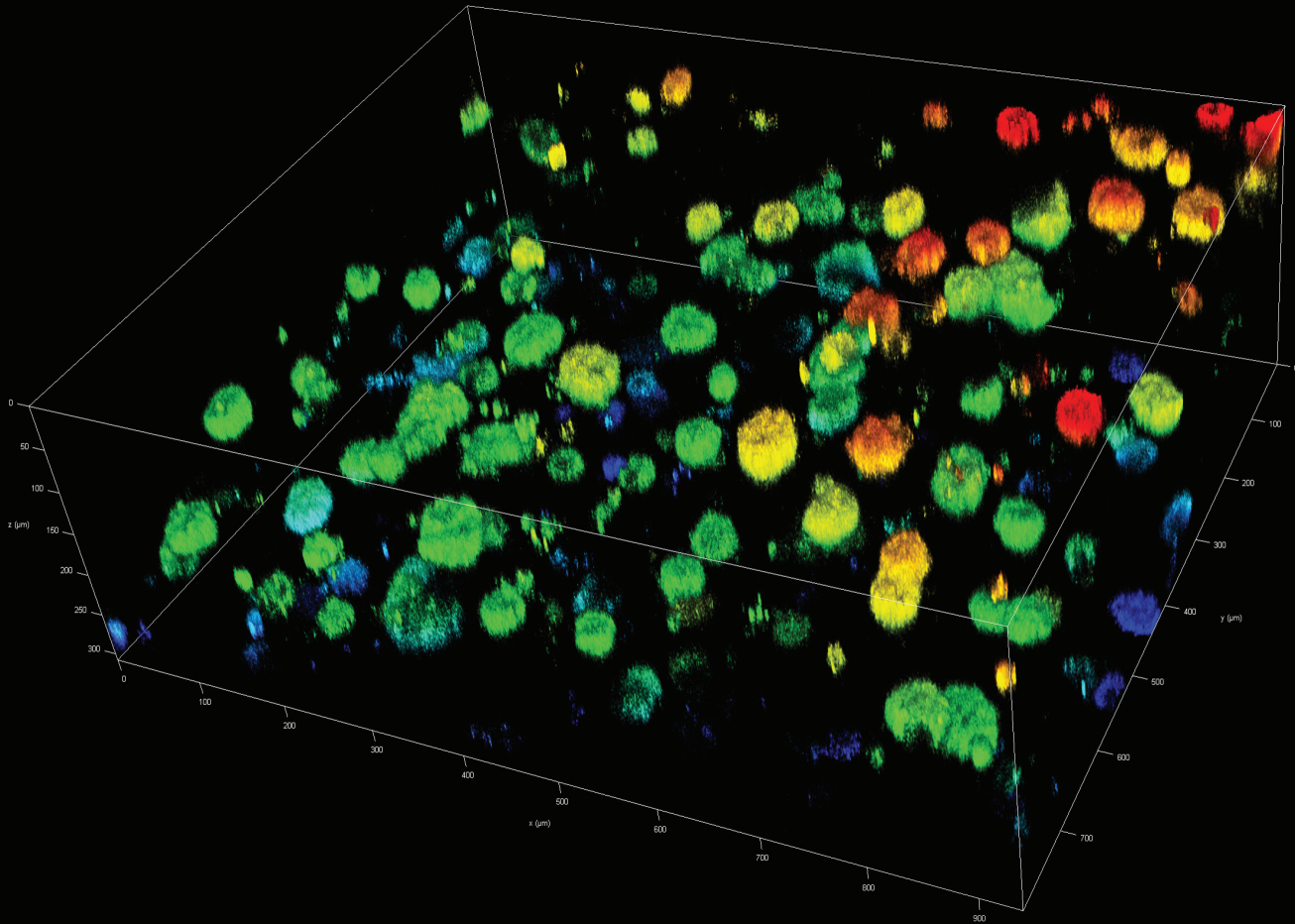


3D Cell Culture



FEATURE	2D Culture	3D Culture
Cell morphology	Flattened, artificial	Native-like morphology
Cell-cell interactions	Limited	Extensive
ECM interactions	Minimal	Physiologically relevant
Gene expression	Altered	More <i>in vivo</i> -like
Differentiation potential	Often reduced	Enhanced
Tissue architecture	Monolayer	Tissue-like organization
Drug response predictability	Lower	Higher
Physiological relevance	Low	High

3

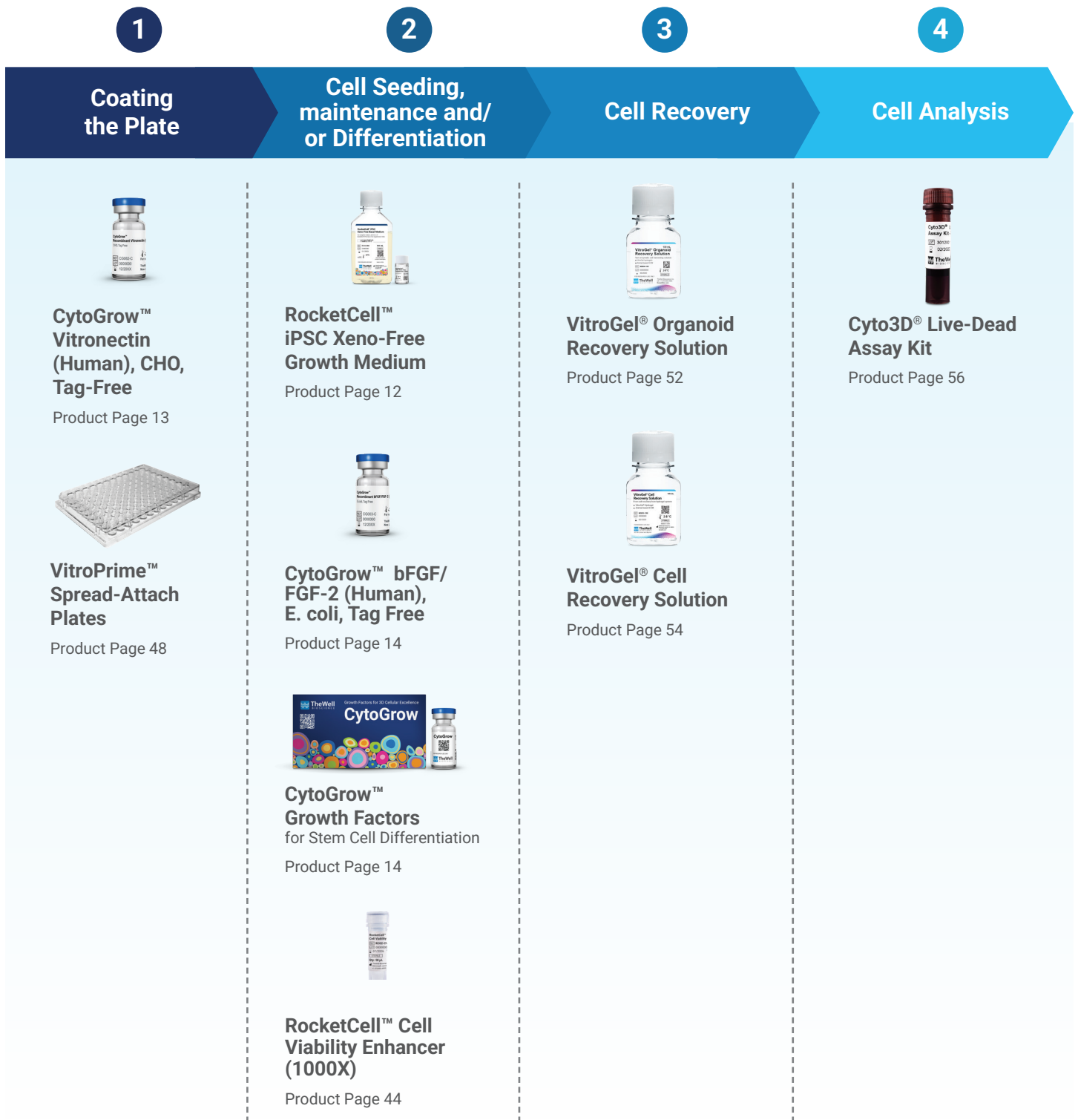


Xeno-Free Stem Cell Culture

TheWell Bioscience offers a complete xeno-free solution for stem cell culture with VitroGel® synthetic hydrogels and RocketCell™ xeno-free media.

VitroGel® offers a synthetic, biofunctionalized matrix for both 2D and 3D stem cell culture, while RocketCell™ xeno-free media supplies the optimized nutrients and growth factors needed for stem cell expansion, maintenance, and differentiation. Together, they deliver a consistent, reproducible culture environment free from the variability of animal-derived materials.

2D iPSC Growth, Maintenance & Differentiation



3.1.2.1

RocketCell™ iPSC Xeno-Free Growth Medium

Xeno-free medium for 2D and 3D expansion of pluripotent stem cells



Cat. No.: RC02-GM

INTRODUCTION

RocketCell™ iPSC Xeno-Free Growth Medium is designed to support the robust growth and maintenance of human induced pluripotent stem cells (iPSCs) under xeno-free conditions. Engineered with defined components and optimized nutrient balance, this medium ensures consistent cell performance, stable pluripotency, and high viability across passages.

RocketCell™ iPSC Xeno-Free Growth Medium provides a reliable solution for researchers seeking a feeder-free, animal-component-free culture environment for iPSC expansion and differentiation studies. The formulation minimizes variability and supports efficient cell attachment, rapid proliferation, and healthy colony morphology, making it ideal for regenerative medicine and disease modeling.

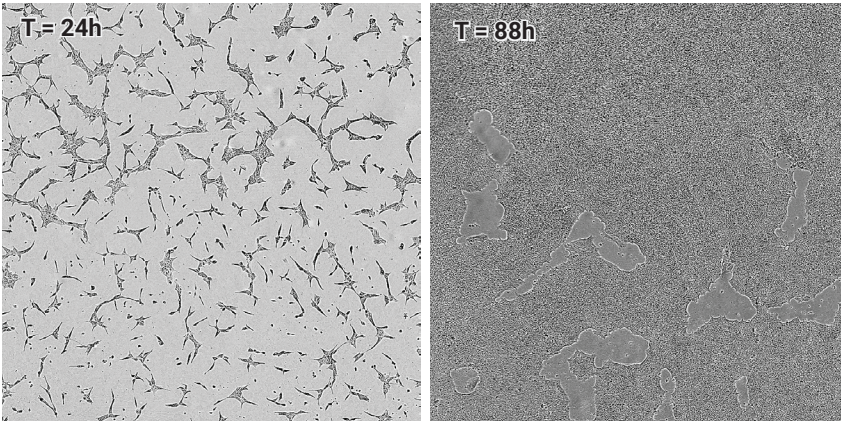
FEATURES

- Optimized for xeno-free expansion of pluripotent stem cells. Easy-to-use, complete formulation tested with multiple pluripotent stem cell lines
- Supports weekend-free culture technique
- Retains key immunological markers of pluripotency

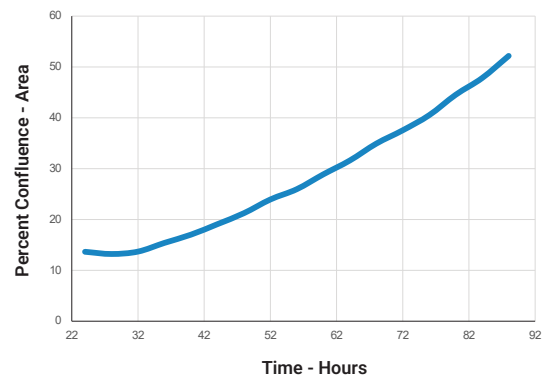
RocketCell™ iPSC Xeno-Free Growth Medium	RC02-GM
Kit Contents:	Quantity and Size
• RocketCell™ iPSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ iPSC Xeno-Free Supplement (100X)	1 x 5 mL

DATA AND REFERENCES

A



B



Growth of iPSC in RocketCell™ iPSC Xeno-Free Growth Medium on CytoGrow™ Vitronectin-coated VitroPrime™ Spread-Attach Plates – Weekend Free Feeding Schedule.

A. iPSCs grown on a CytoGrow™ vitronectin-coated VitroPrime™ 6-well plate with RocketCell™ iPSC Xeno-Free Growth Medium for 4-7 days.

B. iPSC growth was quantified by percent confluence over time, with images collected every 4 hours and analyzed relative to the initial timepoint (T = 0 + 24 hrs).

Learn more about RocketCell™ iPSC Growth Medium

thewellbio.com/rocketcell-ipsc-gm



3.1.2.2

CytoGrow™ Vitronectin (Human)

Premium Grade Performance. Research-friendly Pricing.

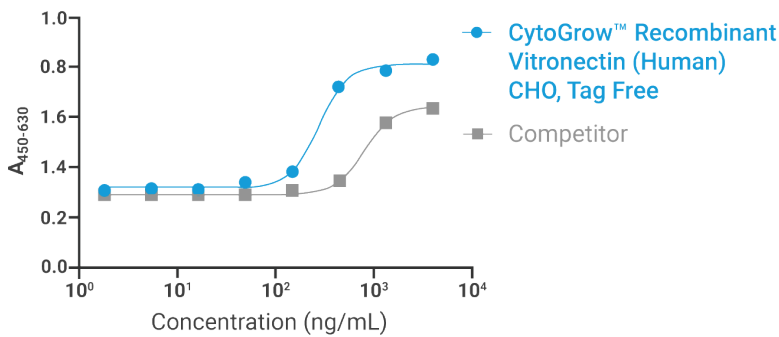


INTRODUCTION

Recombinant Vitronectin (Human) is a recombinant protein designed to support the attachment, expansion, and maintenance of pluripotent stem cells in 2D culture. When used as a coating on tissue culture-treated plates, it provides a defined surface that promotes strong cell adhesion while helping maintain stem cell morphology and pluripotency.

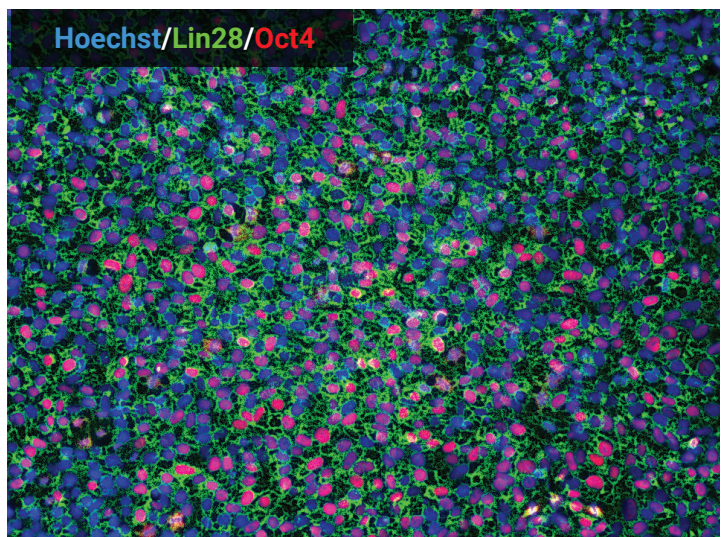
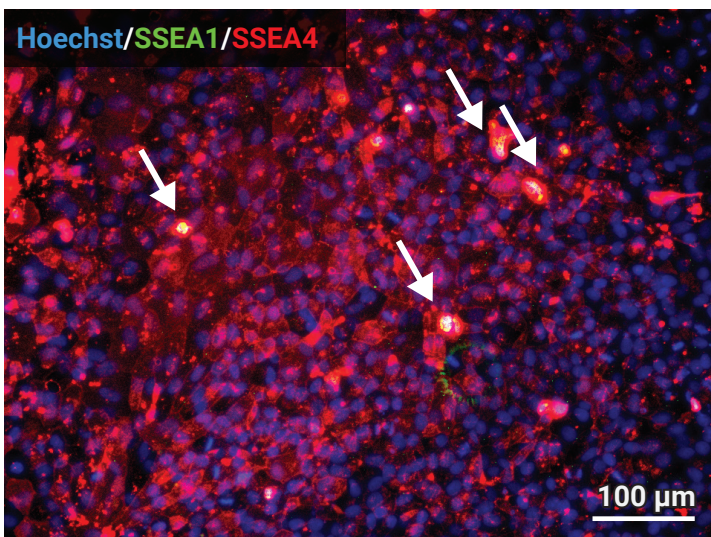
Learn more about CytoGrow™ Vitronectin (Human)

thewellbio.com/product/vitronectin-human-recombinant-protein-cho-tag-free



Product	Cat. No	Size
Vitronectin (Human), Recombinant Protein, CHO, Tag Free	CG082-A	10 µg
	CG082-B	50 µg
	CG082-C	1 mg
Vitronectin (Human), Recombinant Protein, HEK293, His Tag	CG083-A	10 µg
	CG083-A	50 µg
	CG083-A	1 mg

DATA AND REFERENCES



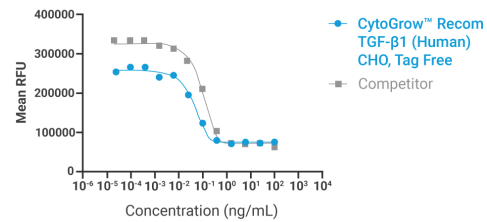
iPSCs grown in RocketCell™ iPSC Xeno-Free Growth Medium on CytoGrow™ Vitronectin-coated 24-well plates were processed for indirect immunofluorescence using standard techniques.

CytoGrow™ Growth Factors for Stem Cell Culture

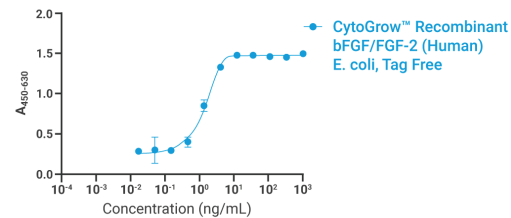
Growth Factor	Catalog No.	Species	Host cell
EGFs (Epidermal Growth Factors)			
EGF	CG014	Human	CHO
FGFs (Fibroblast Growth Factors)			
FGF-1/aFGF	CG090	Human	E. coli
FGF-2/bFGF	CG003	Human	E. coli
FGF-4	CG018	Human	CHO
Hematopoietic Stem Cell-Related			
EPO	CG015	Human	CHO
FLT-3L	CG026	Human	CHO
G-CSF	CG029	Human	HEK293
GM-CSF	CG027	Human	CHO
SCF	CG068	Human	CHO
TPO	CG079	Human	CHO
IGFs (Insulin-like Growth Factors)			
IGF-II	CG100	Human	HEK293
LR3 IGF-1	CG054	Human	CHO
NTs (Neurotrophins)			
CNTF	CG088	Human	E. coli
GDNF	CG092	Human	E. coli
Neurturin	CG103	Human	CHO
NT-3	CG105	Human	HEK293
Persephin	CG108	Human	E. coli
β-NGF	CG104	Human	HEK293
PDGFs (Platelet-Derived Growth Factors)			
PDGF-AA	CG063	Human	CHO
PDGF-AB	CG065	Human	CHO
PDGF-BB	CG0107	Human	CHO
TGFs (Transforming Growth Factors)			
Activin A	CG001	Human	CHO
BMP-2	CG006	Human	E. coli
BMP-7	CG007	Human	CHO
GDF-8	CG094	Human	CHO
TGF-β1	CG069	Human	CHO
TGF-β2	CG071	Human	CHO
TGF-β3	CG072	Human	CHO
VEGFs (Vascular Endothelial Growth Factors)			
VEGF121	CG0110	Human	CHO
VEGF165	CG080	Human	CHO
Wnt-Related Growth Factors			
DKK-1	CG013	Human	CHO
Other Growth Factors			
GH	CG073	Human	CHO
HGF	CG032	Human	CHO
OSM	CG061	Human	CHO

Growth Factor	Catalog No.	Species	Host cell
Interleukins			
IL-3	CG096	Human	E. coli
IL-6	CG041	Human	CHO
IL-10	CG098	Human	CHO
IL-11	CG099	Human	CHO
IL-34(His Tag)	CG014	Human	HEK293
ECM			
Fibronectin	CG024	Human	CHO
Fibronectin Fragment	CG130	Human	HEK293
Vitronectin	CG082	Human	CHO
Accessory Proteins (Supplements and Coagulants)			
Fetuin A	CG016	Human	CHO
Transferrin	CG075	Human	CHO

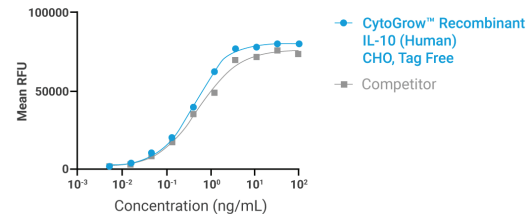
TGF-β1 (Human), Recombinant Protein, CHO, Tag Free



bFGF/FGF-2 (Human), Recombinant Protein, E. coli, Tag Free



IL-10 (Human), Recombinant Protein, CHO, Tag Free

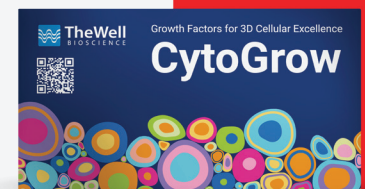


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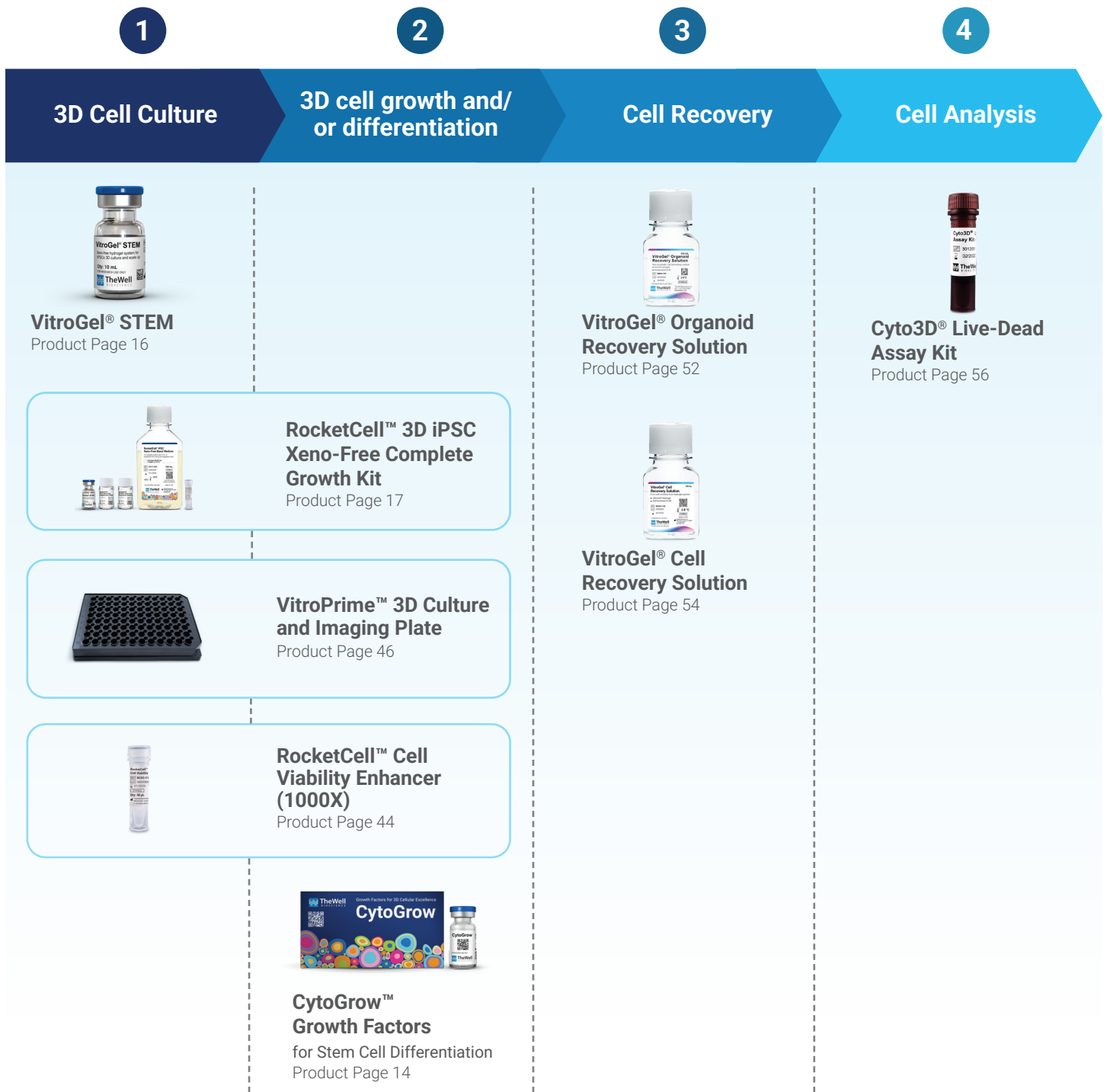


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3D iPSC Growth, Maintenance & Differentiation



3.2.1

VitroGel® STEM

Xeno-free hydrogel for iPSC expansion and differentiation

INTRODUCTION

VitroGel® STEM is a xeno-free (animal origin-free) hydrogel system developed to support scale-up and 3D differentiation of human pluripotent stem cells (hPSCs) to create a high-throughput system to model various tissue and disease states.

This hydrogel system is ready to use with an optimized formulation that fully supports the rapid expansion of high-quality 3D stem cell spheroids with pluripotent properties. hPSCs directly thawed from liquid nitrogen or passaged from 2D matrix-coated culture vessels can be immediately mixed with the hydrogel solution for static suspension cultures. Moreover, the optimization protocol is ideal for time-sensitive experiments, as it does not require excessive medium exchanges, which can ultimately save time and materials. This hydrogel system is compatible with most hPSC culture media and tissue culture vessels. The 3D stem cell spheroids developed using this system can be used for further sub-cultures, patterned differentiation, organoid development, or re-establishing 2D culture morphologies.



Cat. No.: VHM02

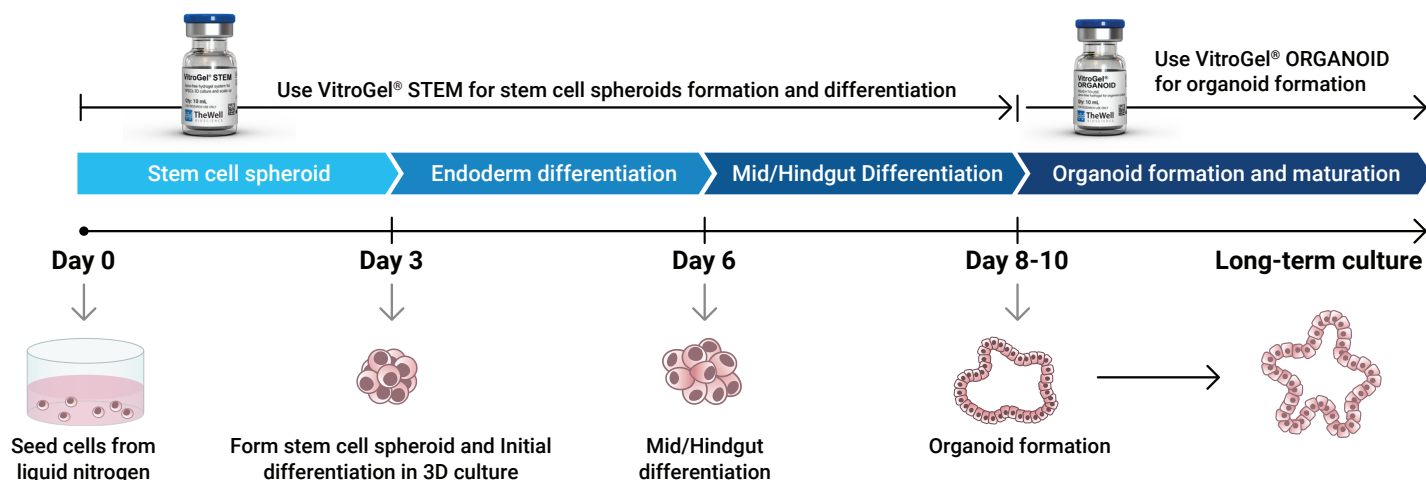
FEATURES

- Yields high-quality 3D stem cells with high success rate for downstream differentiation
- Faster growth rate than traditional 2D culture
- 5-min protocol. Establishes 3D stem cell expansion directly from LN₂ with simple mixing steps.
- Simple and efficient cell harvesting by either centrifuge or the non-enzymatic VitroGel® Organoid Recovery Solution.
- Compatible with most hPSC culture media and tissue culture vessels.

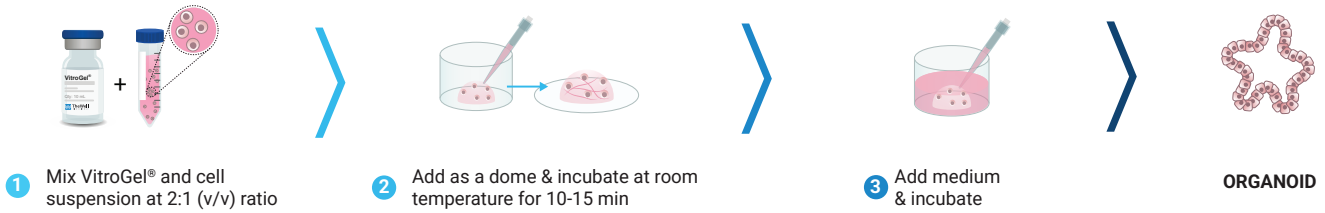
Product	Cat No.	Size
VitroGel® STEM	VHM02	10 mL
	VHM02S	2 mL

Learn more about
VitroGel® STEM

thewellbio.com/VITROGEL-STEM



EASY WORKFLOW



DATA AND REFERENCES

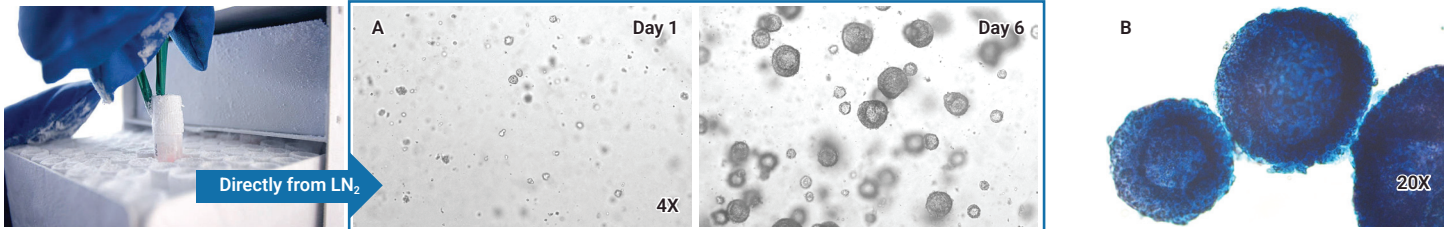


Figure 1. 3D static suspension culture of hPSC directly from Liquid Nitrogen (LN₂)

Start the suspension culture by using healthy and high-quality cells directly from LN₂. hPSC-hydrogel aggregates successfully to form healthy spheroids after 1 day in culture. The hPSC spheroids continue to expand from day 1 to 6 (Figure 1A). The resulting hPSC spheroids also show hallmark features of healthy and high-quality stem cell spheroids, i.e., shallow craters or pockmarks. Figure 1B shows that hPSC static suspension cultures from liquid nitrogen are positive for Alkaline Phosphatase, indicating successful expansion of healthy stem cell populations.

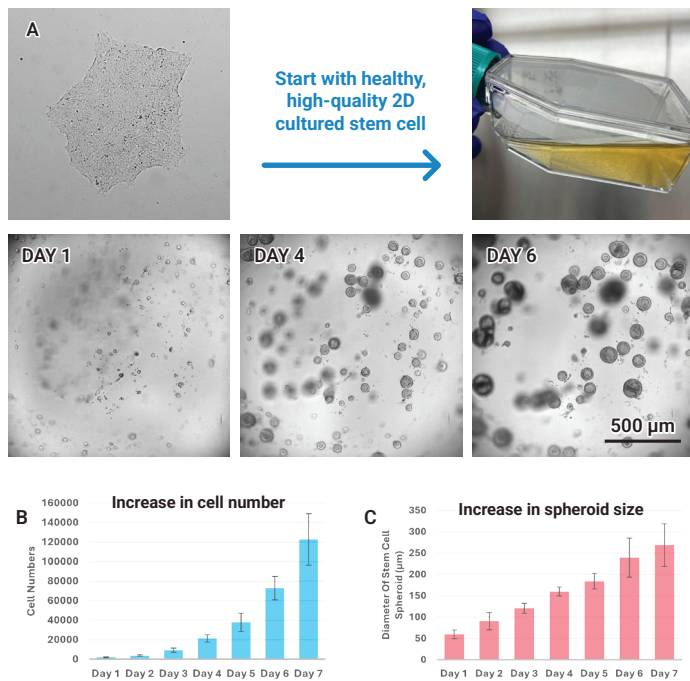


Figure 2. 3D static suspension culture of hPSC from 2D matrix culture

After 24 hours, small hPSC spheroids start to form. From day 1 to 6, cells in the suspension cultures quickly grow, leading to the generation of healthy and high-quality stem cell spheroids. After day 3, cell numbers grew exponentially (Figure 2B), and spheroid size steadily increases (Figure 2C). The hPSC spheroids display characteristics of shallow craters or pockmarks, indicating expression of hPSC markers and successful expansion of healthy and high-quality stem cell spheroids. The resulting spheroids provide researchers with large numbers of healthy hPSCs for further experiments.

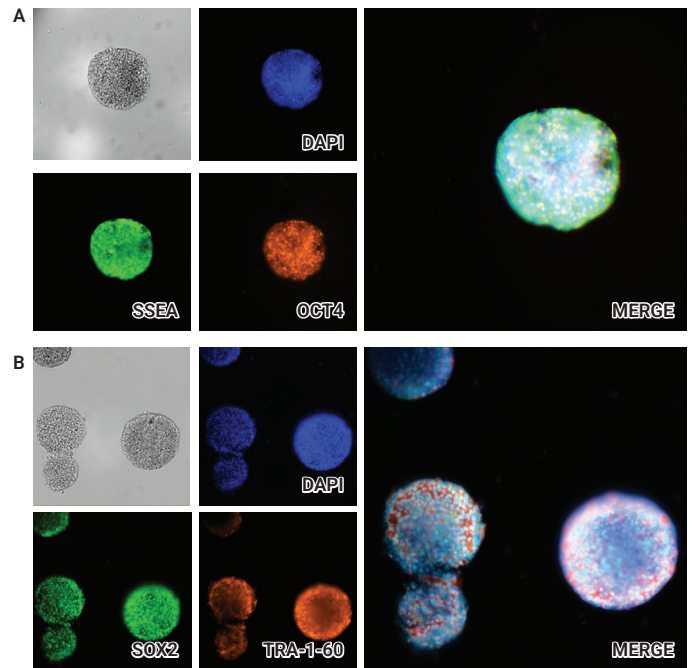


Figure 3. Immunofluorescence images of hPSC spheroids with key pluripotent stem cell markers

VitroGel® STEM ensures the undifferentiated state of stem cell lines during scale-up. As shown in Figure 3, hPSC aggregates in VitroGel® STEM hydrogel and retain pluripotency after 7 days, evidenced by the expression of key pluripotent stem cell markers, SSEA4, OCT4, SOX2, and TRA-1-60.

3.2.2

RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit

An all-in-one xeno-free kit with optimized matrix, medium, and reagents for 3D iPSC expansion

INTRODUCTION

The RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit is a fully defined, animal-free system designed for 3D culture and expansion of iPSCs and hESCs in VitroGel® STEM hydrogel. It supports both single-cell and colony seeding, delivers high cell viability after passaging, and allows alternate-day feeding with a weekend-free workflow. Validated with multiple pluripotent stem cell lines, the kit generates uniform 3D colonies while maintaining key pluripotency markers, including Lin28, Oct4, Nanog, and Tra-1-60.



Cat. No.: RC02-CGK

FEATURES

- **All-in-one Complete System.** Fully defined, xeno-free kit combining 3D hydrogel and growth medium for seamless pluripotent stem cell culture.
- **Improves Cell Survival and Growth.** Supports both single-cell and small-colony seeding, maintaining high post-passaging viability and consistent colony formation.
- **Weekend-Free Workflow.** Alternate-day feeding schedule minimizes handling and supports consistent, long-term culture.
- **High-Density 3D Culture Capability.** 3D hydrogel matrix supports up to 10x higher cell density than 2D culture, maximizing expansion efficiency.
- **Ready-to-use and Room Temperature Stable.** Operated without pre-coating or thawing steps.

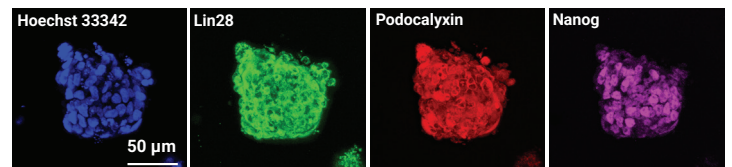
RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit	RC02-CGK
Kit Contents:	Quantity and Size
• VitroGel® STEM	1 x 10 mL
• RocketCell™ 3D iPSC Xeno-Free Suspension Medium	1 x 5 mL
• RocketCell™ Cell Viability Enhancer (1000X)	1 x 50 µL
• RocketCell™ iPSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ iPSC Xeno-Free Supplement (100X)	1 x 5 mL

Learn more about RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit

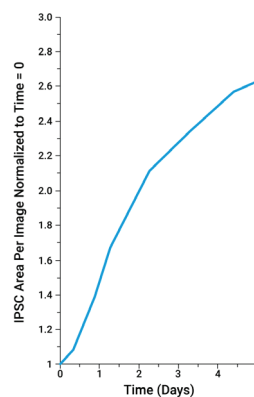
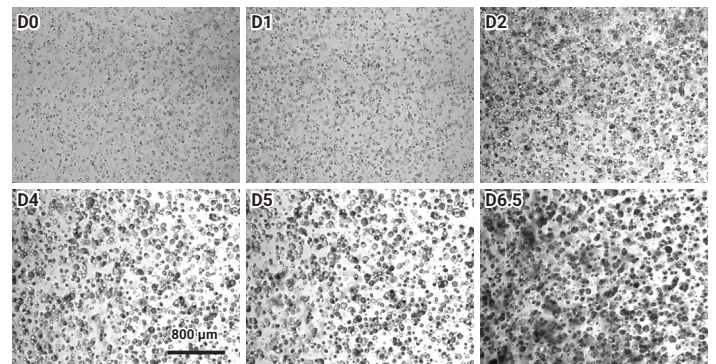
thewellbio.com/product/rocketcell-3d-ipsc-xeno-free-complete-growth-kit/



DATA AND REFERENCES













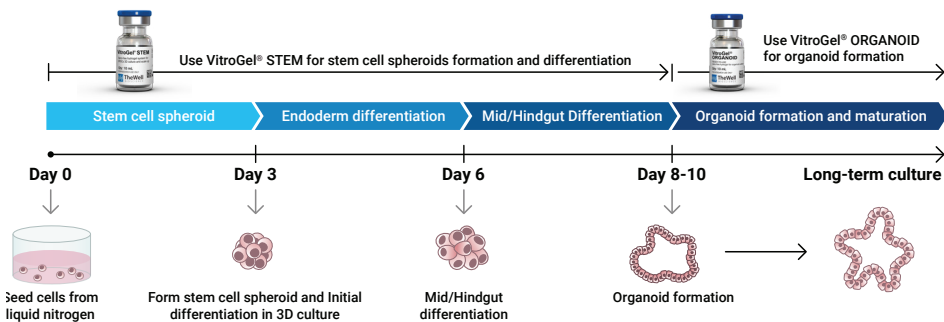
Direct Immunofluorescence Staining of iPSCs in the RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit. Human iPSCs cultured for 7 days in VitroPrime™ 3D Culture and Imaging Imaging Plates with the RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit maintained expression of key pluripotency markers (Lin28, Podocalyxin, and Nanog). Results demonstrate effective 3D stem cell maintenance and streamlined hydrogel-based staining using directly labeled antibodies.



3D Expansion of Human iPSCs in the RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit. Human iPSCs formed uniform 3D spheroids in VitroGel® STEM and showed consistent growth over time. Spheroids reached approximately 85–100 µm in diameter, with nearly 300% expansion after 6.5 days, demonstrating robust growth under xeno-free culture conditions.

iPSC-Derived Organoid

3D iPSC Culture	Organoid Development	Cell Recovery	Cell Analysis
 <p>VitroGel® STEM Product Page 16</p>	 <p>VitroGel® ORGANOID Product Page 20</p>	 <p>VitroGel® Organoid Recovery Solution Product Page 52</p>	 <p>Cyto3D® Live-Dead Assay Kit Product Page 56</p>
 <p>RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit Product Page 17</p>	 <p>RocketCell™ Organoid Essential Core Xeno-Free Medium Product Page 22</p>	 <p>VitroGel® Cell Recovery Solution Product Page 54</p>	
	 <p>CytoGrow™ Growth Factors for Organoid Culture Product Page 24</p>		
	 <p>RocketCell™ Cell Viability Enhancer (1000X) Product Page 44</p>		
	 <p>VitroPrime™ 3D Culture and Imaging Plate Product Page 46</p>		



3.3.2.3

VitroGel® ORGANOID

Xeno-free hydrogel for organoid formation and expansion.

INTRODUCTION

VitroGel® ORGANOID hydrogels 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 models.

VitroGel® ORGANOID hydrogels are ready to use at room temperature and have 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 good for both 3D cell culture and 2D hydrogel coating applications.



Cat. No.: VHM04

FEATURES

- Supports a wide range of organoids from patient-derived samples, stem cells, tissues, and PDX resources.
- Support the **immuno-organoid co-culture** with the true organoid-embedded method
- Long-term organoid culture and naturally supports **apical-out organoids**.
- Easy 20-minute cell harvesting (enzyme-free).

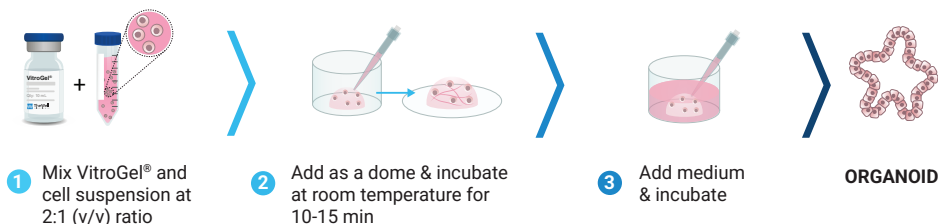
Five versions are available, each formulated with specific biofunctional ligands, mechanical strengths, and degradability profiles to meet a wide range of organoid culture requirements.

VitroGel® ORGANOID-3 is considered as the most popular version.

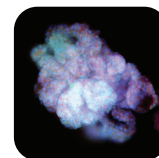


Organoid	VitroGel® Organoid Version
Gastric	1, 2, 3
Lung	1, 3
Brain	2, 3
PDXO	3, 4
Intestinal	3, 5

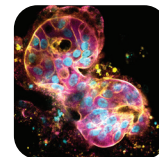
EASY WORKFLOW



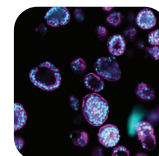
Patient-Derived Organoids



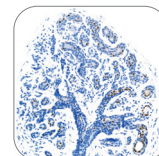
iPSC-Derived Organoids



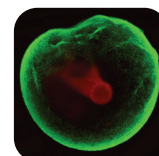
Apical-Out Organoids



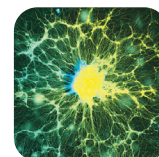
Ex Vivo / Tissue Explant Models



Tumoroid Models



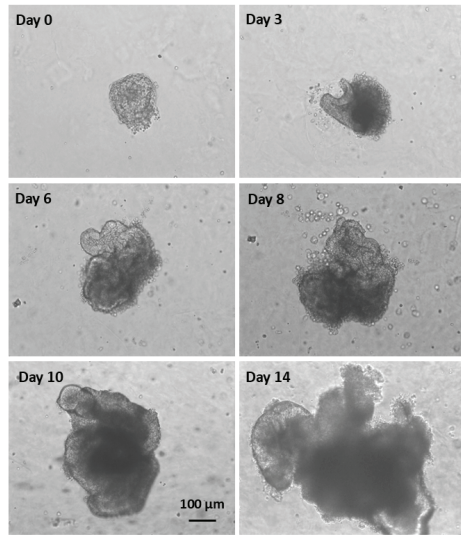
3D Neuron Models



DATA AND REFERENCES

VitroGel® ORGANOID hydrogels 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 models.

VitroGel® ORGANOID



Matrigel®

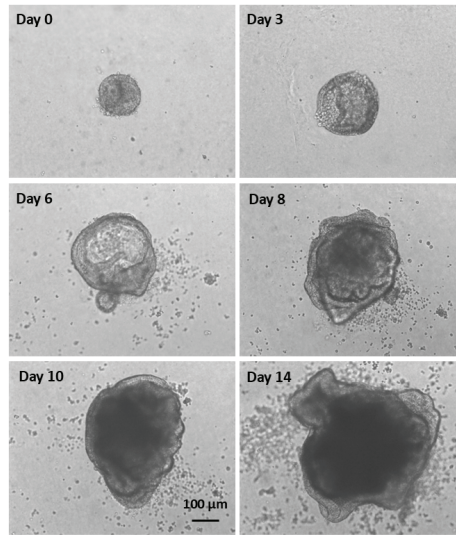
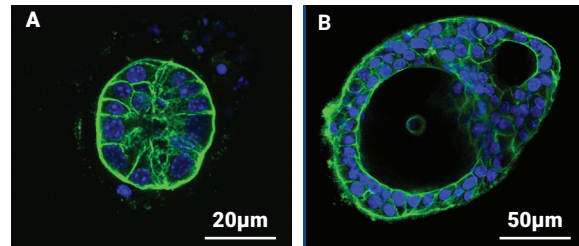


Figure 1. Mouse intestinal organoid culture on VitroGel® ORGANOID and Matrigel. Small organoids recovered from liquid nitrogen were directly seeded with VitroGel® and Matrigel, respectively. 2D Hydrogel Coating Method was used for VitroGel®. Images show the growth of mouse intestinal organoid from day 0 to day 14.

APICAL-OUT | VitroGel®



APICAL-IN | Matrigel®

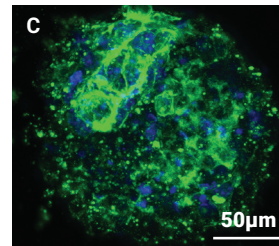


Figure 2. Apical-out organoids cultured in VitroGel® ORGANOID. (A) Indicates a young mouse intestinal organoid with apical-out polarity cultured in VitroGel® ORGANOID-3. (B) A mature intestinal organoid cultured in VitroGel® ORGANOID, maintained apical-out polarity while developing intestinal lumen structure (C) Intestinal organoid cultured in Matrigel® demonstrated apical-in polarity. Green color represents Phalloidin staining; an apical locator, DAPI (blue) - stains cell nuclei.

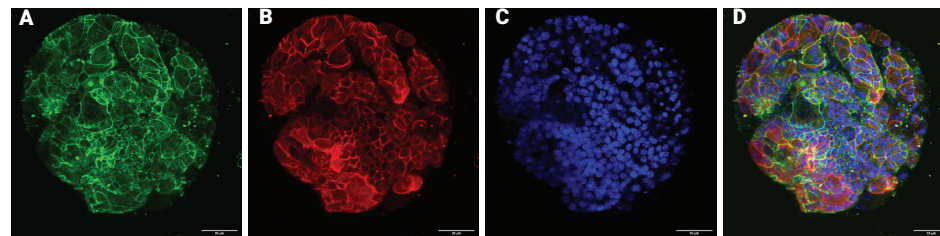


Figure 3. Mature intestinal organoids maintained structural & morphological features in VitroGel® ORGANOID. (A) A mature intestinal organoid maintained structural and morphological integrity for over 60 days. ZO-1 (green) – a tight-junction protein highly expressed in epithelial cells & important for intestinal barrier function. (B) β-catenin (red) – which is a key component of the Wnt/β-catenin signaling pathway, & essential for intestinal homeostasis. (C) DAPI (blue) – stains cell nuclei. (D) Merged image of a long-term cultured mature intestinal organoid.

Product	Cat No.	Size
VitroGel® ORGANOID-1	VHM04-1	10 mL
	VHM04-1S	2 mL
VitroGel® ORGANOID-2	VHM04-2	10 mL
	VHM04-2S	2 mL
VitroGel® ORGANOID-3	VHM04-3	10 mL
	VHM04-3S	2 mL
VitroGel® ORGANOID-4	VHM04-4	10 mL
	VHM04-4S	2 mL
VitroGel® ORGANOID-5	VHM04-5	10 mL
	VHM04-5S	2 mL
VitroGel® ORGANOID Discovery Kit	VHM04-K	



Learn more about
VitroGel® ORGANOID

thewellbio.com/VITROGEL-ORGANOID

3.3.2.4

RocketCell™ Organoid Xeno-Free Essential-Core Medium

A chemically defined foundation medium supports multiple organoid types – just add growth factors.



Cat. No.: RC04-OCM

INTRODUCTION

The RocketCell™ Organoid Xeno-Free Essential-Core Medium Kit is a standardized, chemically defined foundation medium designed to simplify and unify organoid culture workflows. This ready-to-use kit serves as a fundamental medium that provides all essential nutrients and is flexible, allowing direct mixing with growth factors and signaling molecules to support various types of organoid development. It eliminates the need for conditioned media preparation or complex multi-component media and supplement mixing.

This medium supports organoids from different sources and can also serve as a flexible base for formulating differentiation media tailored to the developmental stages of iPSC-derived organoids.

FEATURES

- **Unified Core System.** Replaces the need for separate supplementation, providing a complete nutritional foundation in one simple kit.
- **Plug-and-Play Flexibility.** Serves as a versatile base for multiple organoid lineages and differentiation stages; just add the specific growth factors required for your specific model.
- **100% Xeno-Free & Defined.** Ensures a controlled, animal-origin-free environment, minimizing batch-to-batch variability and regulatory hurdles.
- **Broad Matrix Compatibility.** Validated for use with both synthetic and animal-derived hydrogels, enabling seamless integration into existing organoid platforms.
- **Enhanced Viability & Recovery.** Supports robust initial survival and maintains high viability through repeated passaging and long-term culture.
- **Maximum Efficiency.** Drastically reduces media preparation time and calculation errors, allowing researchers to focus on data rather than bench work.

Learn more about RocketCell™ Organoid Xeno-Free Essential-Core Medium

thewellbio.com/product/rocketcell-organoid-xeno-free-essential-core-medium/

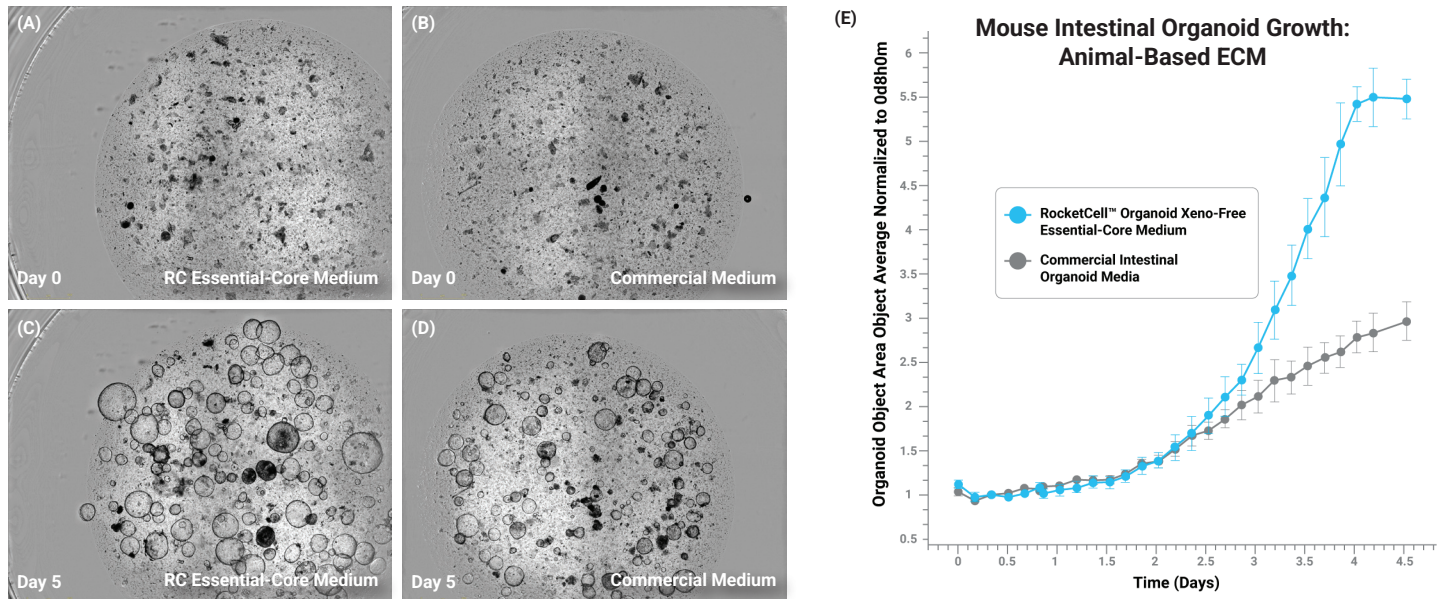


RocketCell™ Organoid Xeno-Free Essential-Core Medium (Standard)	RC04-OCM
Kit Contents:	Quantity and Size
• RocketCell™ Organoid Xeno-Free Essential-Core Basal Medium	1 x 500 mL
• RocketCell™ Organoid Xeno-Free Essential-Core Supplement (50X)	1 x 10 mL
• Phenol Red (1000X)	500 µL

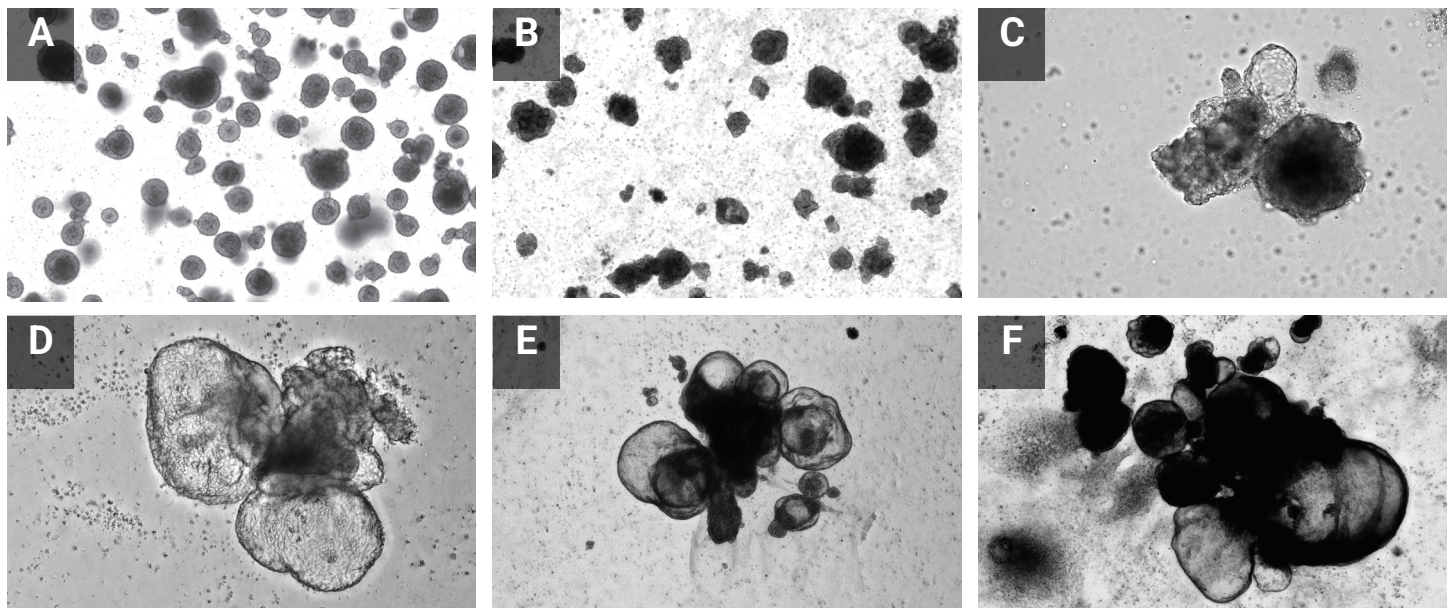
RocketCell™ Organoid Xeno-Free Essential-Core Medium, Minus Vitamin A	RC04-OCM-MA
Kit Contents:	Quantity and Size
• RocketCell™ Organoid Xeno-Free Essential-Core Basal Medium	1 x 500 mL
• RocketCell™ Organoid Xeno-Free Essential-Core Supplement (50X), Minus Vitamin A	1 x 10 mL
• Phenol Red (1000X)	500 µL

RocketCell™ Organoid Xeno-Free Essential-Core Medium, Minus Insulin	RC04-OCM-MI
Kit Contents:	Quantity and Size
• RocketCell™ Organoid Xeno-Free Essential-Core Basal Medium	1 x 500 mL
• RocketCell™ Organoid Xeno-Free Essential-Core Supplement (50X), Minus Insulin	1 x 10 mL
• Phenol Red (1000X)	500 µL

DATA AND REFERENCES



Intestinal Organoid Growth in RocketCell™ Organoid Xeno-Free Essential-Core Medium vs. Commercial Medium. Mouse intestinal organoids were cultured in Matrigel and grown in either RocketCell™ Organoid Xeno-Free Essential-Core Medium supplemented with intestinal organoid growth factors or a commercial intestinal organoid medium. Organoid growth was monitored from Day 0 to Day 5. (A–D) Representative images of organoids at Day 0 and Day 5. (E) Normalized organoid area from Day 0 to Day 5.



Use of RocketCell™ Organoid Xeno-Free Essential-Core Medium in Generating iPSC-derived Liver Organoids. RocketCell™ Organoid Xeno-Free Essential-Core Medium was prepared and supplemented with organoid-specific growth factors at different development stages until mature liver organoids are generated. Mature organoids were cultured in VitroGel™ ORGANOID hydrogel and maintained. (A) iPSC-derived spheroids generated in RocketCell™ Organoid Xeno-Free Essential-Core Medium. (B) Definitive endoderm differentiated spheroids. (C) Hepatic endoderm differentiated spheroids. (D) Early hepatic maturation. (E) Liver organoids with hepatic maturation. (F) Mature differentiated liver organoids generated in media supplemented with RocketCell™ Organoid Xeno-Free Essential-Core Medium and CytoGrow™ growth factors: Day 30.

Perfect Match with CytoGrow™ Premium-Grade Growth Factors for Organoid Culture

CytoGrow™ is TheWell Bioscience's portfolio of premium-grade recombinant proteins that pair seamlessly with RocketCell™ Organoid Xeno-Free Essential Core Medium to enhance cellular activity and drive superior performance.

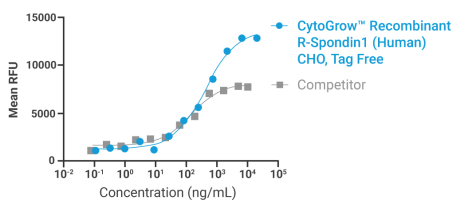
For the recommended CytoGrow™ recombinant proteins, refer to page 24.



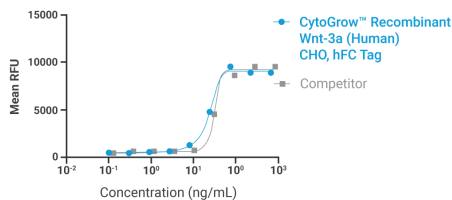
CytoGrow™ Growth Factors by Organoid Type

Organoid Types	Key Growth Factors and Cytokines					
Brain	BDNF (CG002)	FGF-2 (CG003)	GDNF (CG092)	SHH		
	EGF (CG014)	FGF-8b (CG020)	NT-3 (CG105)	TGF-β1 (CG069)		
Breast	EGF (CG014)	FGF-10 (CG022)	Noggin (CG059)	R-Spondin3		
	FGF-2 (CG003)	NRG1-β1 (CG106)	R-Spondin1 (CG067)	Wnt-3a (CG084)		
	FGF-7 (CG019)					
Gastric	Activin-A (CG001)	FGF-4 (CG018)	Gastrin	R-Spondin1 (CG067)		
	BMP-4	FGF-10 (CG022)	Noggin (CG059)	Wnt-3a (CG084)		
	EGF (CG014)					
Inner Ear	BMP-4	FGF3				
	FGF-2 (CG003)	FGF-10 (CG022)				
Intestinal	Activin-A (CG001)	EGF (CG014)	Noggin (CG059)	Wnt-3a (CG084)		
	BMP-4	FGF-4 (CG018)	R-Spondin1 (CG067)			
Kidney	Activin-A (CG001)	BMP-7 (CG007)	FGF-7 (CG019)	GDNF (CG092)		
	BMP-2 (CG006)	FGF-2 (CG003)	FGF-9 (CG021)	R-Spondin1 (CG067)		
	BMP-4					
Liver	Activin-A (CG001)	FGF-2 (CG003)	Gastrin	OSM (CG061)		
	BMP-4	FGF-7 (CG019)	HGF (CG032)	R-Spondin1 (CG067)		
	BMP-7 (CG007)	FGF-10 (CG022)	IGF-1 (CG053)	VEGF165 (CG080)		
	EGF (CG014)	FGF-19 (CG119)	Noggin (CG059)	Wnt-3a (CG084)		
Lung	Activin-A (CG001)	FGF-7 (CG019)	Noggin (CG059)	SHH		
	FGF-4 (CG018)	FGF-10 (CG022)	R-Spondin1 (CG067)	Wnt-3a (CG084)		
Prostate	EGF (CG014)	Noggin (CG059)	Wnt-3a (CG084)			
	FGF-10 (CG022)	R-Spondin1 (CG067)				
Retinal	FGF-2 (CG003)	Noggin (CG059)	Wnt-3a (CG084)			
	IGF-1 (CG053)	SHH				

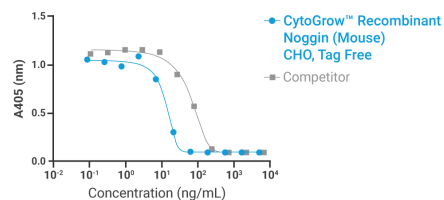
R-Spondin1 (Human),
Recombinant Protein, CHO, Tag Free



Wnt-3a (Human),
Recombinant Protein, CHO, hFC Tag



Noggin (Mouse),
Recombinant Protein, CHO, Tag Free



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2D NSC Growth, Maintenance & Differentiation

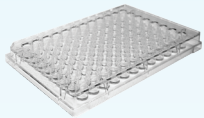
- 1
- 2
- 3
- 4



Coating the Plate



VitroGel® NEURON
Product Page 26



VitroPrime™ Spread-Attach Plates
Product Page 48

Cell Seeding, Maintenance and/or Differentiation



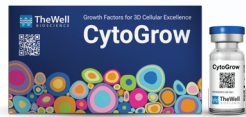
RocketCell™ NSC Xeno-Free Complete Growth Kit
Product Page 27



RocketCell™ NSC Xeno-Free Growth Medium
Product Page 28



RocketCell™ Cell Viability Enhancer (1000X)
Product Page 44



CytoGrow™ Growth Factors for Neuron Culture
Product Page 29

Cell Recovery



VitroGel® Organoid Recovery Solution
Product Page 52



VitroGel® Cell Recovery Solution
Product Page 54

Cell Analysis



Cyto3D® Live-Dead Assay Kit
Product Page 56

3.4.2.1

VitroGel® NEURON

Xeno-free hydrogel for neural stem cells and neuron cultures.



Cat. No.: VHM07

INTRODUCTION

VitroGel® NEURON is the first-of-its-kind synthetic, xeno-free hydrogel specifically engineered to support both 2D and 3D neuronal culture and *in vivo* delivery. This groundbreaking platform eliminates the variability of animal-derived ECMs, such as Matrigel®, and provides a defined, reproducible, and scalable environment for neuronal growth, differentiation, and network formation.

With its ready-to-use, room-temperature-operation formulation, VitroGel® NEURON streamlines workflows, is transparent, and imaging-friendly, enabling real-time visualization of neural development. The system is optimized for primary cells, cell lines, iPSC-derived neural stem cells, and neuron maturation in both 2D and 3D formats, making it a powerful tool for translational neuroscience research.

FEATURES

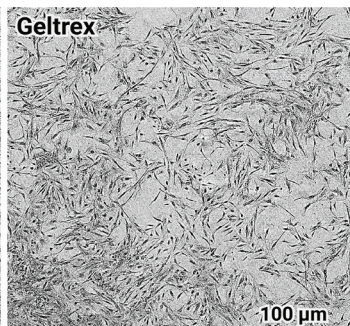
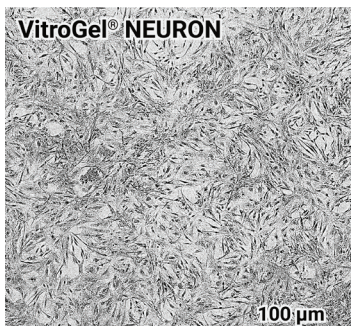
Superior for 2D Thin Coating over Animal-based ECM

- **200X Dilution.** 4X more usage than animal-based ECM.
- **Long-Term Culture.** Over 4 weeks of maintenance and post-differentiation culture.
- **Easy and Fast Operation.** No need to remove the coating solution, just seed cells directly.

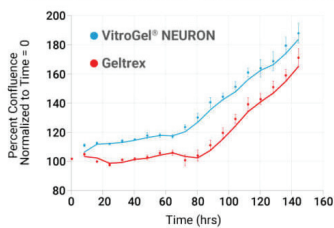
3D Neuron Culture Made Easy with VitroGel® NEURON

- **3D Neuron Differentiation.** Supports both single cells and neuron spheroids.
- **Excellent Cell-Cell Communication.** Enhanced cell extension and cell-matrix interactions.
- **Imaging-Friendly.** Transparent and direct staining within the hydrogel for high-quality image data

DATA AND REFERENCES



Growth of NSCs on VitroPrime™ Spread Attach 24 Well Plate



Growth of iPSC-Derived NSCs on VitroGel® NEURON 2D Thin Coating

iPSC-derived NSCs were cultured on VitroPrime™ Spread-Attach Plates coated with either VitroGel® NEURON (1:200) or Geltrex® for 6 days.



3D Culture of NSC Spheroids in VitroGel® NEURON

iPSCs were expanded in 3D, recovered from the hydrogel, and encapsulated in VitroGel® NEURON. Cells were differentiated into NSCs using CytoGrow™ Growth Factors and further matured into dopaminergic neurons

Learn more about VitroGel® NEURON

thewellbio.com/VITROGEL-NEURON



Product	Cat No.	Size
VitroGel® NEURON	VHM07	10 mL
	VHM07S	2 mL

3.4.2.2

RocketCell™ NSC Xeno-Free Complete Growth Kit

All-in-one, ready-to-use kit for 3D and 2D neural stem cell culture.



Cat. No.: RC01-CGK1

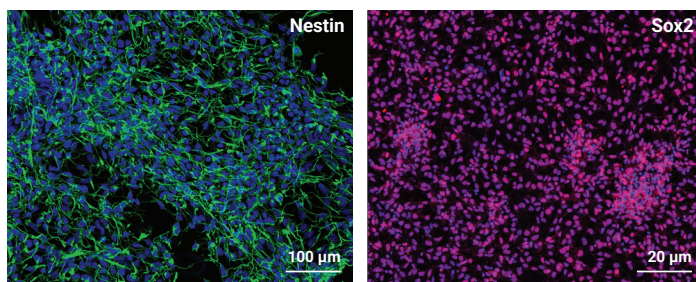
INTRODUCTION

The RocketCell™ NSC Xeno-Free Complete Growth Kit is an all-in-one, ready-to-use kit designed to support the expansion and maintenance of neural stem cells (NSCs) in both 3D and 2D formats. The RocketCell™ NSC Xeno-Free Complete Growth Kit provides a robust, scalable platform for long-term culture and large-scale expansion of undifferentiated NSCs in both 3D and 2D formats—while maintaining their multipotency and functional integrity. Designed for convenience and performance, this ready-to-use system operates at room temperature, integrates seamlessly with high-resolution imaging and high-throughput screening workflows for advanced neuroscience and regenerative medicine research.

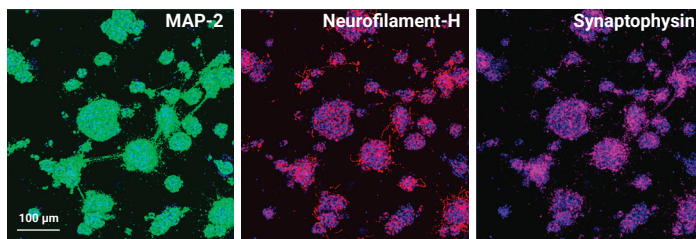
FEATURES

- **Ready-to-use, All-in-one Kit.** 100% synthetic kit with optimal combination of matrix and medium for 2D and 3D NSC culture and maintenance.
- **Supports 3D NSC Network Formation.** Promotes 3D neurite and axonal outgrowth for 3D networking formation, ideal for advanced studies.
- **Long-Term Culture and Maintenance.** Culture NSCs for over 4 weeks without compromising their multipotency.
- **Simple 3D and 2D Workflows at Room Temperature.** Room temperature operation with simple mixing or coating steps; supports lab automation.
- **Easy Cell Harvesting.** Simple and efficient cell harvesting with VitroGel® Organoid Recovery Solution

DATA AND REFERENCES



iPSC-derived NSCs cultured on VitroGel® NEURON-coated VitroPrime™ Spread-Attach Plates maintained expression of the NSC markers **Nestin** and **Sox2**, confirming their neural stem cell phenotype



iPSCs were cultured in 3D using the RocketCell™ 3D Xeno-Free iPSC Growth Kit and differentiated into floor plate neuroepithelial spheroids. Following recovery with VitroGel® Organoid Recovery Solution and expansion with the RocketCell™ NSC Xeno-Free Complete Growth Kit, NSCs were differentiated into neurons. Neuronal markers MAP2, Neurofilament-H, and Synaptophysin confirmed successful differentiation.

RocketCell™ NSC Xeno-Free Complete Growth Kit	RC01-CGK1
Kit Contents:	Quantity and Size
• VitroGel® NEURON	1 x 10 mL
• RocketCell™ NSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ NSC Xeno-Free Supplement (50X)	1 x 10 mL
• CytoGrow™ EGF Growth Factor	1 x 10 µg
• CytoGrow™ FGF Growth Factor	1 x 10 µg

Learn more about RocketCell™ NSC
Xeno-Free Complete Growth Kit

thewellbio.com/product/rocketcell-nsc-xeno-free-complete-growth-kit/



3.4.2.3

RocketCell™ NSC Xeno-Free Growth Medium

Xeno-Free complete medium for 3D and 2D neural stem cell culture.



Cat. No.: RC01-GM

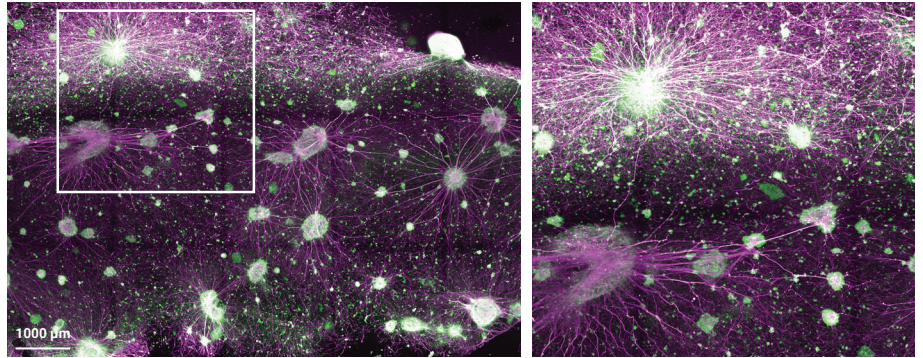
INTRODUCTION

RocketCell™ NSC Xeno-Free Growth Medium is a chemically defined, xeno-free medium designed for the expansion and maintenance of neural stem cells (NSCs). Optimized for both 2D and 3D cultures, it supports robust cell growth, reproducible results, and advanced neuroscience research applications.

FEATURES

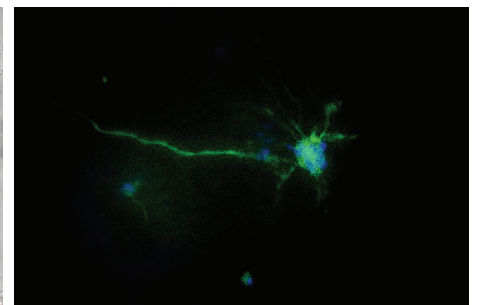
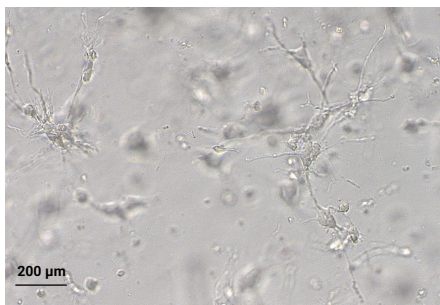
- Supports NSC network formation
- Enables long-term culture and maintenance without affecting multipotency.
- Simple and efficient cell harvesting

DATA AND REFERENCES



Development of Mature Neurons from iPSCs using FPNE. Development of Cholinergic Neurons from iPSCs using FPNE Protocol using VitroGel® NEURON. FPNE Organoids were recovered from VitroGel® STEM using VitroGel® Organoid Recovery Solution and plated with VitroGel® NEURON and RocketCell™ NSC Xeno-Free Growth Medium. Cultures were developed for 14 days prior to indirect immunostaining for Phosphorylated Neurofilament (RT97, purple) and Choline Acetyl Transferase (CHAT, green)

RocketCell™ NSC Xeno-Free Growth Medium	RC01-GM
Kit Contents:	Quantity and Size
• RocketCell™ NSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ NSC Xeno-Free Supplement (50X)	1 x 10 mL
• CytoGrow™ EGF Growth Factor	1 x 10 µg
• CytoGrow™ FGF Growth Factor	1 x 10 µg



VitroGel® NEURON Hydrogel and RocketCell™ NSC Xeno-Free Growth Medium Media Support 3D NSC Cultures and Neurite Outgrowth. 3D NSC cultures were established by preparing a single-cell NSC suspension with RocketCell™ NSC Xeno-Free Growth Medium and mixing with VitroGel® NEURON for 6 days (A). Immunofluorescence staining was performed to evaluate the presence of beta-III-tubulin, a neuron maturation marker (B).

Learn more about
RocketCell™ NSC
Xeno-Free Growth
Medium



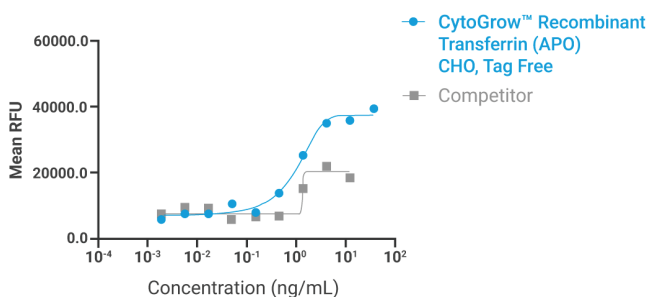
thewellbio.com/product/rocketcell-nsc-xeno-free-growth-medium/

CytoGrow™ Growth Factors by Family for Neuron Culture

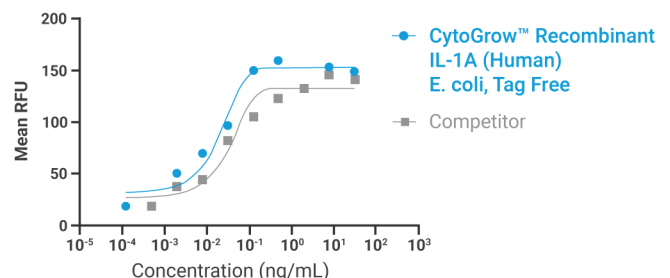
Growth Factor	Catalog No.	Species	Host cell
EGFs (Epidermal Growth Factors)			
EGF	CG014	Human	CHO
NRG1-β1	CG106	Human	E. coli
FGFs (Fibroblast Growth Factors)			
FGF-10/KGF2	CG020	Human	CHO
FGF-8b	CG021	Human	E. coli
FGF-9	CG022	Human	CHO
IGFs (Insulin-like Growth Factors)			
IGF-1	CG120	Human	HEK293
Insulin	CG033	Human	Yeast
LR3 IGF-1	CG054	Human	CHO
NTs (Neurotrophins)			
BDNF	CG002	Human	CHO
NT-3	CG105	Human	HEK293
TGFs (Transforming Growth Factors)			
Activin A	CG001	Human	CHO
Wnt - Related Growth Factors			
Wnt-3a	CG084	Human	CHO
Other Growth Factors			
HGF	CG032	Human	CHO
Noggin	CG059	Human	CHO
OSM	CG061	Human </td <td>CHO</td>	CHO
Prolactin	CG066	Human	CHO

Growth Factor	Catalog No	Species	Host cell
Interleukins			
IL-1A	CG036	Human	E. coli
IL-1B	CG037	Human	E. coli
IL-3	CG096	Human	CHO
IL-4	CG040	Human	CHO
IL-6	CG041	Human	CHO
IL-7	CG042	Human	CHO
IL-12	CG043	Human	CHO
IL-13	CG044	Human	CHO
IL-15	CG045	Human	CHO
IL-15(hFc Tag)	CG046	Human	CHO
IL-21	CG048	Human	CHO
IL-21(hFc Tag)	CG049	Human	CHO
IL-23	CG050	Human	CHO
IL-27(His Tag)	CG051	Mouse	HEK293
IL-34(His Tag)	CG052	Human	HEK293
ECMs			
Fibronectin	CG024	Human	CHO
Accessory Proteins (Supplements and Coagulants)			
Insulin-Transferrin-Selenium	CG086		
Transferrin	CG075	Human	CHO
Transferrin-APO	CG076	Human	CHO

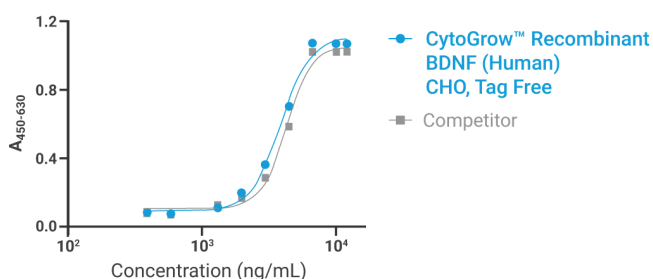
Transferrin (APO) Human, Recombinant Protein, CHO, Tag Free



IL-1A (Human), Recombinant Protein, E. coli, Tag Free



BDNF (Human), Recombinant Protein, CHO, Tag Free

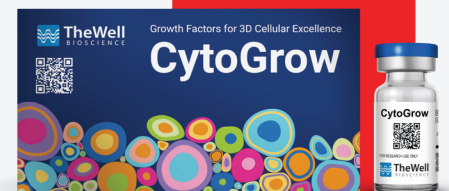


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View our competitive pricing and see how much you can save.

3D NSC Growth, Maintenance & Differentiation

1

2

3

4

3D Cell Culture

3D Maintenance and/or Differentiation

Cell Recovery

Cell Analysis



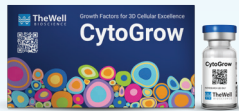
VitroGel® NEURON
Product Page 26



VitroGel® STEM
Product Page 16



RocketCell™ 3D NSC Xeno-Free Complete Growth Kit
Product Page 31



CytoGrow™ Growth Factors for Neuron Culture
Product Page 29



VitroGel® Organoid Recovery Solution
Product Page 52



VitroGel® Cell Recovery Solution
Product Page 54



Cyto3D® Live-Dead Assay Kit
Product Page 56



RocketCell™ Cell Viability Enhancer (1000X)
Product Page 44



VitroPrime™ 3D Culture and Imaging Plate
Product Page 46

3.5.2.3

RocketCell™ 3D NSC Xeno-Free Complete Growth Kit

All-in-one, ready-to-use kit for 3D and 2D neural stem cell culture.



Cat. No.: RC01-CGK2

INTRODUCTION

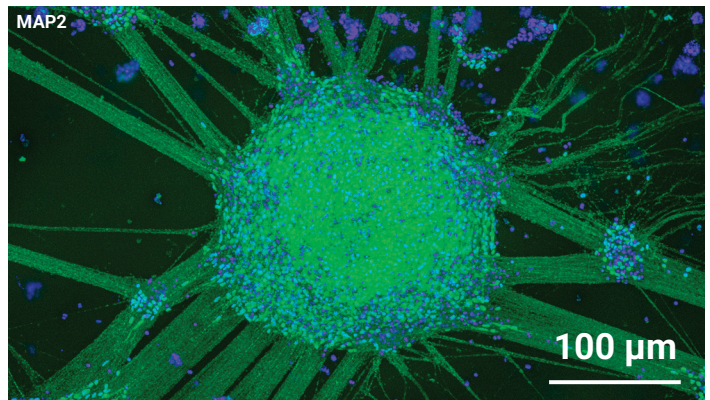
The RocketCell™ 3D NSC Xeno-Free Complete Growth Kit is an all-in-one, ready-to-use kit designed to support the expansion and maintenance of neural stem cells (NSCs) in both 3D and 2D formats. This kit offers a fully defined, optimized combination of a synthetic hydrogel and a xeno-free complete medium, eliminating variability and ensuring consistent, reproducible results.

The RocketCell™ 3D NSC Xeno-Free Complete Growth Kit provides a robust, scalable platform for long-term culture and large-scale expansion of undifferentiated NSCs in both 3D and 2D formats—while maintaining their multipotency and functional integrity. This ready-to-use system operates at room temperature, integrates seamlessly with high-resolution imaging and high-throughput screening workflows for advanced neuroscience and regenerative medicine research.

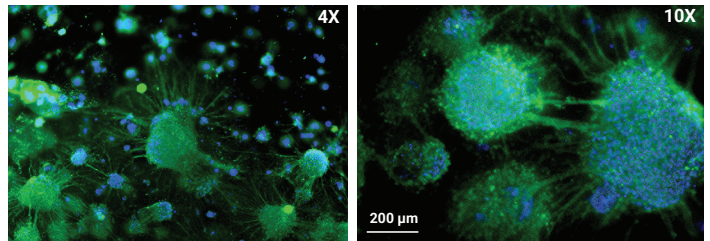
FEATURES

- **Ready-to-use, All-in-one Kit.** 100% synthetic kit with optimal combination of matrix and medium for 2D and 3D NSC culture and maintenance.
- **Supports 3D NSC Network Formation.** Promotes 3D neurite and axonal outgrowth for 3D networking formation, ideal for advanced studies.
- **Long-Term Culture and Maintenance.** Culture NSCs for over 4 weeks without compromising their multipotency.
- **Simple 3D Workflow at Room Temperature.** Room temperature operation with simple mixing or coating steps; supports lab automation.
- **Easy Cell Harvesting.** Simple and efficient cell harvesting with VitroGel® Organoid Recovery Solution.

DATA AND REFERENCES



Neuronal Differentiation of NSCs in 3D Culture. NSCs expanded and differentiated using the RocketCell™ 3D NSC Xeno-Free Complete Growth Kit. After 14 days, immunofluorescence staining confirmed strong neuronal marker expression and extensive neurite network formation.



VitroGel® NEURON Hydrogel Supports the 3D Development of Dopaminergic Neurons. iPSCs were cultured in RocketCell™ 3D Xeno-Free iPSC Xeno-Free Growth Kit for 6 passages and were differentiated into Floor Plate Neuro-Epithelial Spheroids.

RocketCell™ 3D NSC Xeno-Free Complete Growth Kit	RC01-CGK2
Kit Contents:	Quantity and Size
• VitroGel® NEURON	1 x 10 mL
• RocketCell™ NSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ NSC Xeno-Free Supplement (50X)	1 x 10 mL
• RocketCell™ 3D NSC Xeno-Free Suspension Medium	1 x 5 mL
• RocketCell™ Cell Viability Enhancer (1000X)	1 x 50 μL
• CytoGrow™ EGF Growth Factor	1 x 10 μg
• CytoGrow™ FGF Growth Factor	1 x 10 μg

Learn more about RocketCell™ 3D NSC Xeno-Free Complete Growth Kit

<https://www.thewellbio.com/product/rocketcell-3d-nsc-xeno-free-complete-growth-kit/>



2D hMSC Growth and Maintenance

1

2

3

4

Coating the Plate

Cell Seeding and Maintenance

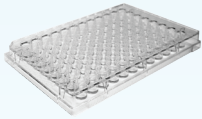
Cell Recovery

Cell Analysis



Cytogrow™ Fibronectin and Vitronectin

Product Page 13 and 35



VitroPrime™ Spread-Attach Plates

Product Page 48



RocketCell™ hMSC Xeno-Free Complete Growth Medium

Product Page 33



VitroGel® Organoid Recovery Solution

Product Page 52



VitroGel® Cell Recovery Solution

Product Page 54



Cyto3D® Live-Dead Assay Kit

Product Page 56

3.6.2.1

RocketCell™ hMSC Xeno-Free Complete Growth Medium

High-performance, chemically-defined kit for superior expansion of hMSCs



Cat. No.: RC06-GM

INTRODUCTION

RocketCell™ hMSC Xeno-Free Complete Growth Medium is a fully defined, animal component-free formulation designed for robust, rapid, and reproducible expansion of human mesenchymal stem cells (hMSCs). This complete medium system integrates an optimized basal medium with a chemically defined supplement to ensure high stability and potency for consistent, long-term performance.

The kit has been rigorously validated with multiple mesenchymal stem cell lines, producing uniform cultures with key multipotency markers, including CD73, CD90, and CD105. For smooth transition from serum-based media, initial culture on fibronectin-coated plates is recommended. After short-term adaptation, cells can be expanded on standard cultureware without additional coating.

FEATURES

- **Complete, Fully Defined Medium System.** A xeno-free, chemically defined formulation combining optimized supplements with a robust basal medium for seamless hMSC expansion.
- **Enhanced Cell Survival and Proliferation.** Supports low-density seeding, maintains high post-passaging viability, and promotes consistent culture renewal.
- **Optimized ECM Production.** The formulation promotes endogenous extracellular matrix secretion, as evidenced by a gel-like matrix in high-density cultures, thereby enhancing cell attachment and microenvironment stability.
- **Weekend-Free Workflow.** An alternate-day feeding schedule minimizes handling and supports a consistent, long-term culture.
- **High Reproducibility and Regulatory Readiness.** Ensures high reproducibility, long-term stability, and regulatory compliance for advanced research and translational use.
- **Preserved Multipotency.** Maintains classical tri-lineage differentiation capacity into adipogenic, chondrogenic, and osteogenic lineages after extended expansion.

RocketCell™ hMSC Xeno-Free Growth Medium	RC06-GM
Kit Contents:	Quantity and Size
• RocketCell™ hMSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ hMSC Xeno-Free Supplement	1 x 15 mL

Learn more about RocketCell™ hMSC Xeno-Free Growth Medium

thewellbio.com/product/rocketcell-hmsc-xeno-free-complete-growth-medium/



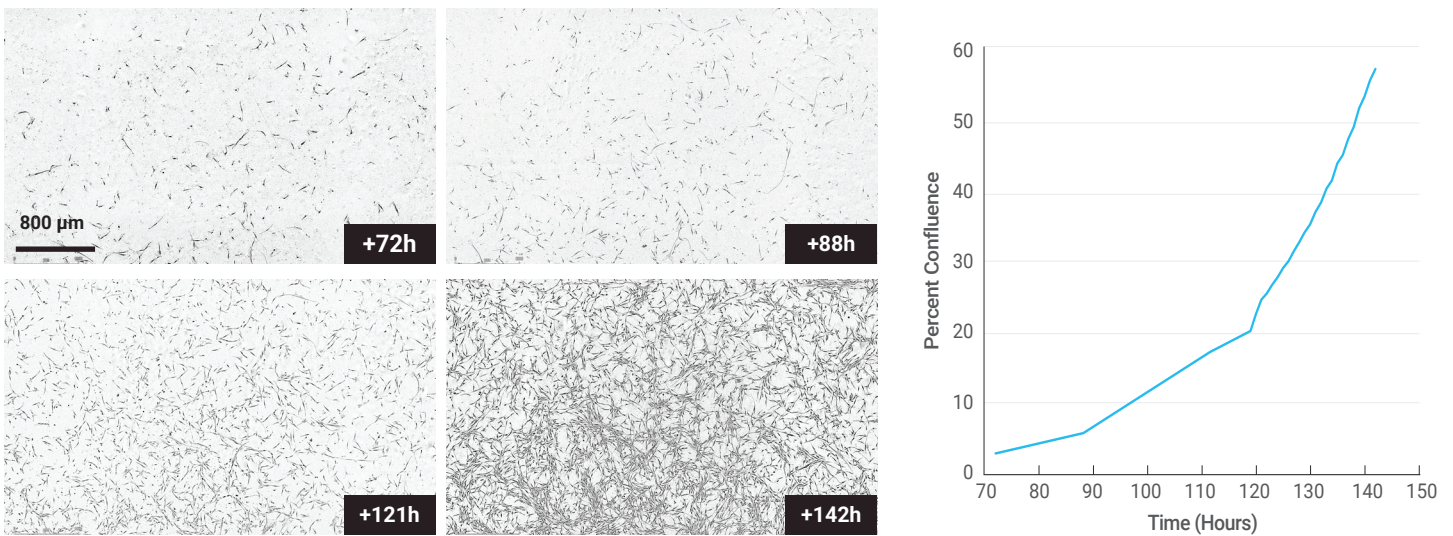
7 Day Cycle with Observation following Passage or Thaw



7 Day Cycle following Passage or Thaw

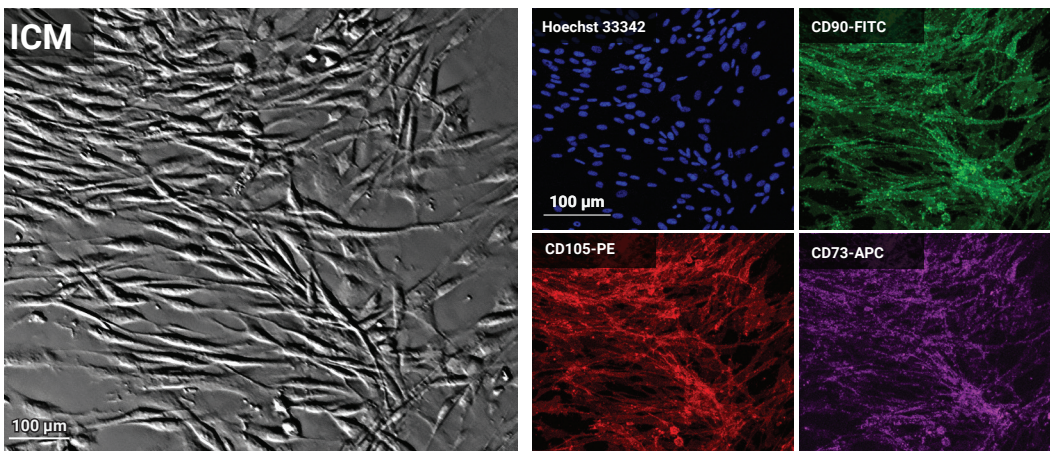


DATA AND REFERENCES



Growth of Cryopreserved hMSCs in RocketCell™ hMSC Xeno-Free Complete Growth Medium

hMSCs cryopreserved for 20 years were thawed and seeded in fibronectin-coated VitroPrime™ Spread-Attach Plates. Cells were cultured under low oxygen conditions (6% O₂), with media changed after 48 hours. Cell growth was monitored using the IncuCyte® S3 every 4 hours starting at 72 hours post-seeding.



Immunostaining of hMSCs in RocketCell™ hMSC Xeno-Free Complete Growth Medium

hMSCs were cultured on Fibronectin-coated VitroPrime™ Spread-Attach Plates for 6 days and stained for MSC markers (CD90, CD105, and CD73). Images were captured using a Leica MICA confocal microscope.

3.6.2.2

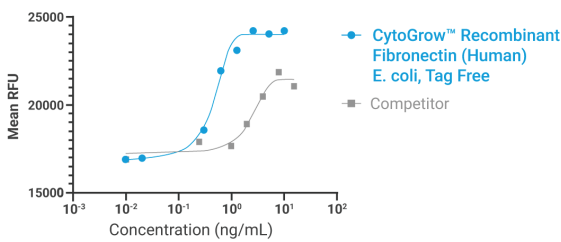
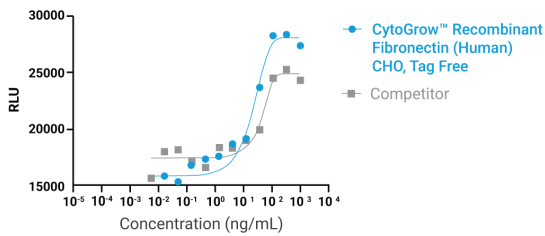
CytoGrow™ Fibronectin (Human), Recombinant Protein

Premium Grade Performance. Research-friendly Pricing.

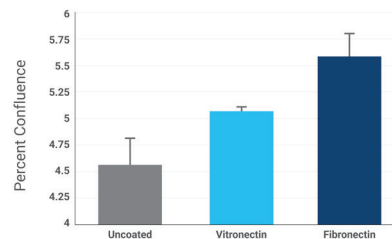
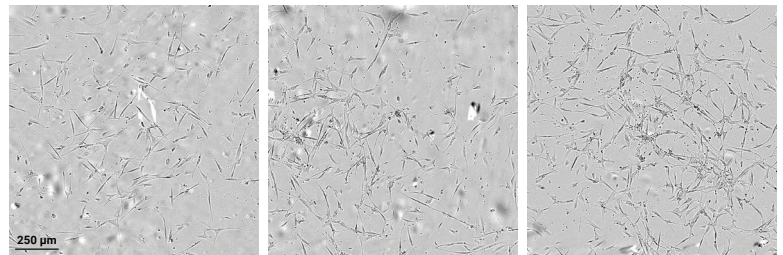


INTRODUCTION

CytoGrow™ Fibronectin is a recombinant extracellular matrix (ECM) protein designed to support the attachment, spreading, and expansion of human mesenchymal stem cells (hMSCs) in 2D culture. By providing a biologically relevant surface that mimics the native cellular microenvironment, Fibronectin promotes strong cell adhesion and helps maintain healthy cell morphology during routine culture.



DATA AND REFERENCES

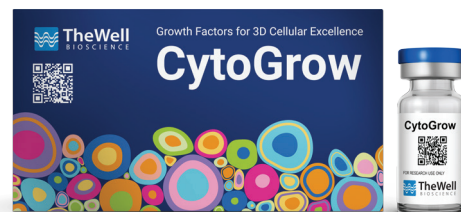


Growth of hMSCs in RocketCell™ hMSC Xeno-Free Complete Growth Medium on Different ECM Coatings. hMSCs were passaged and cultured on uncoated, vitronectin-coated, or fibronectin-coated VitroPrime™ Spread-Attach Plates. After 72 hours, cell growth and morphology were evaluated using the IncuCyte® S3 system.

Product	Cat. No	Size
Fibronectin (Human), Recombinant Protein, CHO, Tag Free (CG024)	CG024-A	10 µg
	CG024-B	50 µg
	CG024-C	1 mg
Fibronectin (Human), Recombinant Protein, E. coli, Tag Free (CG025)	CG025-A	10 µg
	CG025-B	50 µg
	CG025-C	1 mg
Fibronectin (Human), Recombinant Protein, HEK293, Tag Free (CG023)	CG023-A	10 µg
	CG023-B	50 µg
	CG023-C	1 mg
Fibronectin Fragment (Human), Recombinant Protein, HEK293, His Tag (CG130)	CG130-A	10 µg
	CG130-B	50 µg
	CG130-C	1 mg

Learn more about
CytoGrow™ Fibronectin

thewellbio.com/product-category/cytogrow-growth-factors/cytogrow-ecm



3D hMSC Growth and Maintenance

1

3D Cell Encapsulation



VitroGel® MSC
Product Page 37

2

3D Cell Growth and Maintenance



RocketCell™ hMSC Xeno-Free Complete Growth Medium
Product Page 33

3

Cell Recovery



VitroGel® Organoid Recovery Solution
Product Page 52



VitroGel® Cell Recovery Solution
Product Page 54

4

Cell Analysis



Cyto3D® Live-Dead Assay Kit
Product Page 56



Cat. No.: VHM03

3.7.2.1 VitroGel® MSC

Xeno-free hydrogel for mesenchymal stem cell 3D culture and scale-up

INTRODUCTION

VitroGel® MSC is a xeno-free hydrogel system for 3D culture and scale-up of mesenchymal stem cells (MSCs) and exosome production. This hydrogel system can be used to make hydrogel cell beads for MSC scale-up. Microcarriers are not required for MSC scale-up.

VitroGel® MSC is ready-to-use with an optimized formulation that fully supports the rapid expansion of MSCs. Cells directly thawed from liquid nitrogen or passaged from 2D culture vessels can be immediately mixed with the hydrogel solution for 3D culture or hydrogel-cell bead generation. This hydrogel system is compatible with most MSC culture media and tissue culture vessels. By using the VitroGel® Organoid Recovery Solution, cell harvesting after 3D culture is simple and efficient.

FEATURES

- Yields high-quality, functional cells to support full downstream differentiation.
- Supports fast MSC expansion and long-term cell culture
- Simple, 30-minute set-up. No microcarrier is required, eliminating long hours of seeding, suspension steps, and recovery.
- Supports 3D bioprocess for exosome production with high purity and high yield.
- Simple and efficient cell harvesting by either centrifuge or the non-enzymatic VitroGel® Organoid Recovery Solution.
- 100% xeno-free hydrogel system and ideal for *in vitro* and *in vivo* applications.

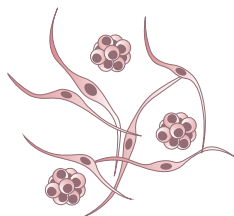
Product	Cat No.	Size
VitroGel® MSC	VHM03	10 mL
	VHM03S	2 mL

Learn more about VitroGel® MSC

thewellbio.com/VITROGEL-MSC

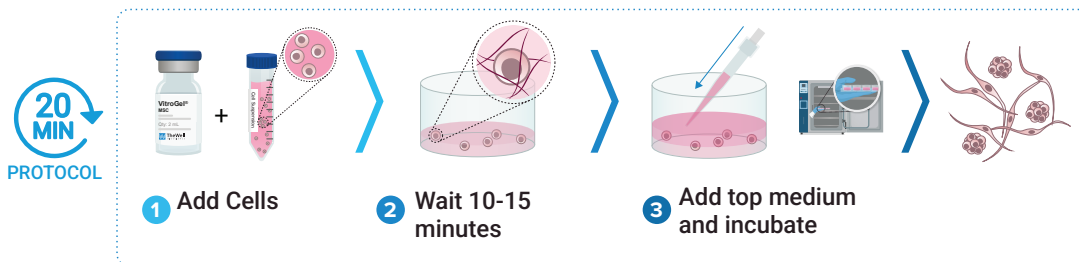


DATA AND REFERENCES



3D Cell Culture MSC

3D Cell Culture of MSC (20 mins) – “Just add cells”



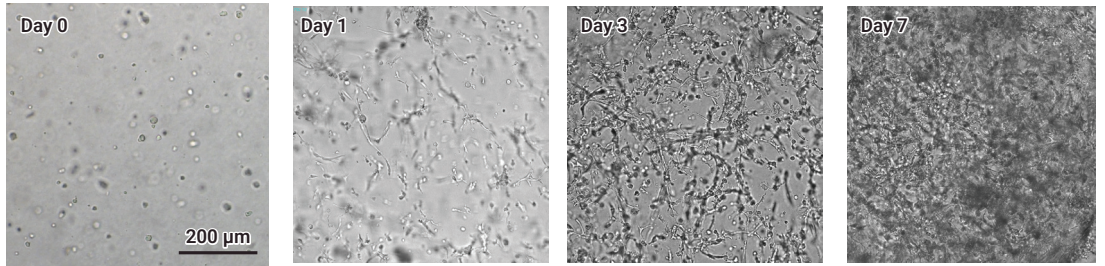
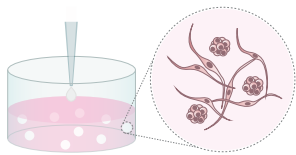


Figure 1. 3D culture of MSC in VitroGel® MSC.

MSC cells were suspended in cell medium at 8×10^5 cells/mL and mixed with VitroGel® MSC for 3D culture (according to the 3D cell culture protocols of VHM03). The images show the growth and expansion of cells inside of 3D hydrogel from day 0 to day 7.

3D Scale-Up of MSC (20 mins) – Hydrogel-Cell Bead Formation



3D Scale-Up MSC Hydrogel Bead Method

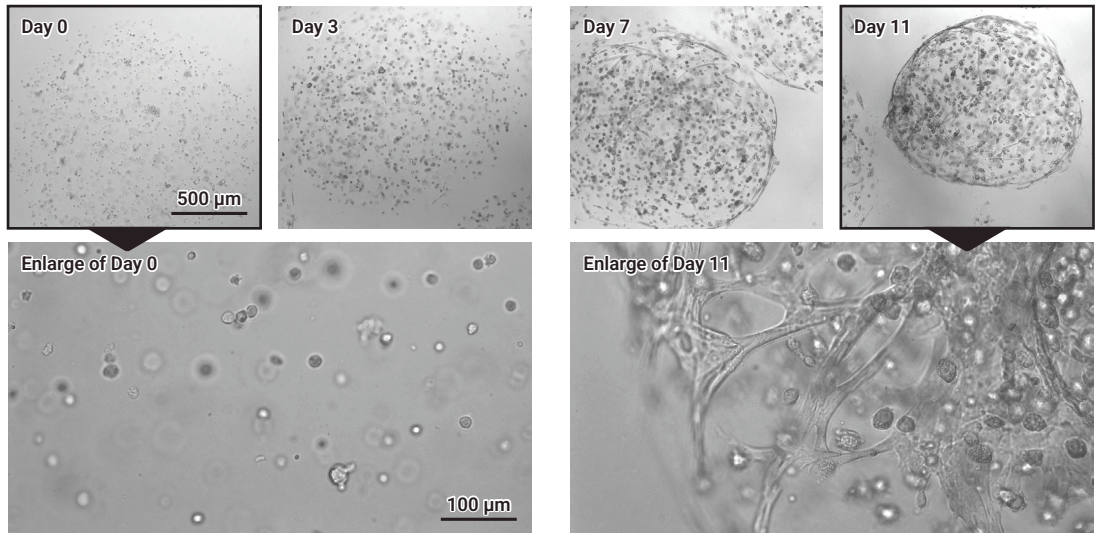
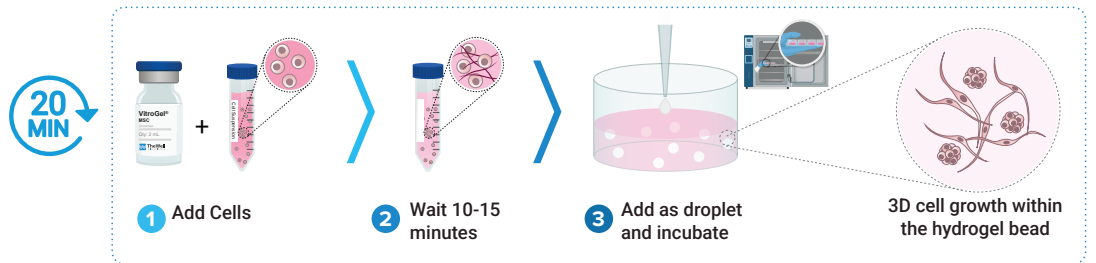


Figure 2. 3D culture of MSC in hydrogel beads.

MSCs were mixed with VitroGel® MSC and added to the cell culture medium as droplets for hydrogel-cell bead formation (according to the hydrogel-cell bead protocols of VHM03). The size of the hydrogel beads can be controlled by the volume of the droplets. MSC cells can grow within the hydrogel beads for long-term culture (>3 weeks). The images show the growth and expansion of cells inside of hydrogel beads from day 0 to day 11. The enlarged images show the cells grew from single cells to cell spheroid and matrix structure from day 0 to day 11.

Other Product Platforms

A successful 3D cell culture workflow extends beyond the matrix itself. TheWell Bioscience offers a comprehensive portfolio of supporting products designed to simplify culture, recovery, and analysis. RocketCell™ Xeno-Free Media and Supplements provide optimized conditions for cell expansion and differentiation, while VitroPrime™ cultureware supports reliable 2D and 3D culture workflows. For downstream applications, the VitroGel® Organoid Recovery Solution enables gentle, non-enzymatic cell and organoid retrieval, preserving viability and functionality. Additionally, Cyto3D® assay kits streamline imaging and viability analysis, allowing researchers to efficiently evaluate cellular responses within complex 3D environments. Together, these solutions create a seamless, end-to-end platform for advanced stem cell and 3D cell culture research.



4.1

Supplements

Stem cell culture supplements provide essential growth factors and nutrients that support cell growth, viability, and function. A defined and reproducible culture environment improves consistency and performance for stem cell expansion, maintenance, and differentiation.

3.7.2.1

RocketCell™ S1 XF Supplement (50X)

Chemically Defined, Xeno-Free B27-like Supplement



Cat. No.: RCS1

INTRODUCTION

RocketCell™ S1 XF Supplement is a chemically defined, xeno-free replacement for conventional B27 supplements, engineered for the long-term survival, maturation, and functional maintenance of CNS neurons and a broad spectrum of other cell types. All components are of recombinant, synthetic origin, eliminating the batch-to-batch variability and safety concerns inherent in animal-derived additives.

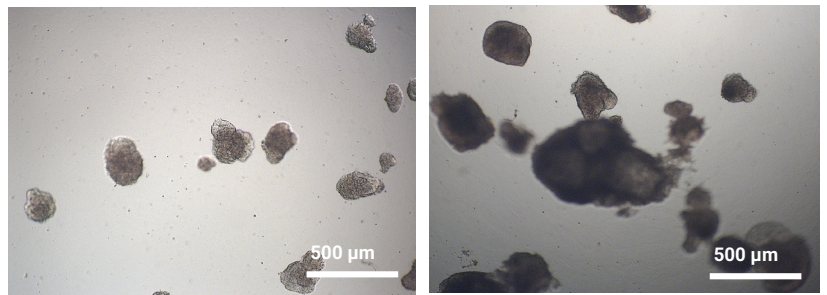
This is the all-purpose formulation – the right choice when the primary goal is maximizing long-term cell viability without directing cell fate. Supplied as a 50X liquid concentrate for use with standard neurobasal or serum-free basal media.

FEATURES

- **Comprehensive antioxidant protection** – An optimized blend of antioxidant enzymes and vitamins shields sensitive cells from oxidative damage, supporting high viability even at low plating densities
- **Retinoid-competent formulation** – Supports baseline CNS neuronal maintenance, maturation, and long-term culture stability
- **3D-validated** – Specifically optimized for use within VitroGel® hydrogel systems for spheroid and organoid applications
- **Broad utility** – Supports organoid, tumoroid, hippocampal and cortical neuron cultures, iPSC-derived neuron maturation, cancer stem cell, and cardiomyocyte maintenance
- **Drop-in replacement** – Protocol-compatible with standard B27 workflows at equivalent working concentrations

Product	Cat No.	Size	Description
RocketCell™ S1 XF Supplement (50X)	RCS1-R	10 mL	Standard formulation
RocketCell™ S1 XF Supplement minus Vitamin A (50X)	RCS1-NA	10 mL	For neural induction and organoid protocols requiring retinoid-free conditions
RocketCell™ S1 XF Supplement Minus Insulin (50X)	RCS1-NI	10 mL	For metabolic studies and signaling research requiring precise insulin control

DATA AND REFERENCES



iPSC-derived intestinal organoid generation using synthetic hydrogel VitroGel® STEM & VitroGel® ORGANOID with RocketCell™ xeno-free culture media.

Learn more about
RocketCell™ S1 XF
Supplement (50X)

[thewellbio.com/product/
rocketcell-s1-xf-supplement](https://thewellbio.com/product/rocketcell-s1-xf-supplement)



3.7.2.1

RocketCell™ S2 XF Supplement (100X)

Chemically Defined, Xeno-Free N2-like Supplement



Cat. No.: RCS2

INTRODUCTION

RocketCell™ S2 XF Supplement is a chemically defined, xeno-free N2-like supplement providing a minimalistic, precisely controlled serum-free environment for neuronal and non-neuronal cell culture. Formulated exclusively with recombinant and high-purity synthetic components, it delivers the consistency and traceability that modern neural and stem cell research demands..

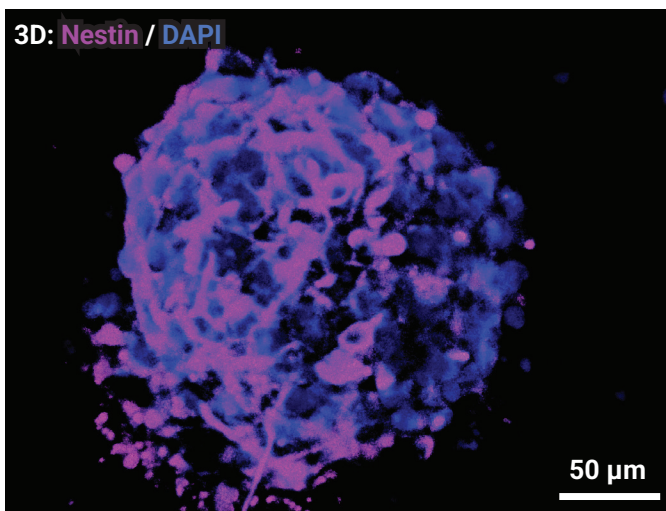
Ideal for serum-free adaptation, neural induction, glial selection, and a wide range of non-neuronal cell line applications.

FEATURES

- **Precision minimalist formula** – A tightly defined, low-complexity formulation provides a clean, low-noise environment optimized for neuronal selectivity and signaling studies
- **Xeno-free recombinant components** – Formulated exclusively with recombinant and high-purity synthetic ingredients for consistent, lot-to-lot reproducibility
- **Neural stem/progenitor cell support** – Validated component in neural induction media (NIM) protocols for transitioning hES/iPSC cells toward neuroepithelial precursors
- **Broad application range** – Supports serum-free proliferation across a wide range of cell types and model systems, including glial models, pituitary lines, and select cancer lines, as well as organoid and tumoroid applications
- **Neuronal selection utility** – Selectively supports postmitotic neurons in mixed primary cultures while suppressing overgrowth of non-neuronal cell populations

Product	Cat No.	Size
RocketCell™ S2 XF Supplement (100X)	RCS2	5 mL

DATA AND REFERENCES



Growth of NSCs in VitroGel® STEM using RocketCell™ Complete Xeno-Free Growth Medium 12 Day Observation with Incucyte S3

Learn more about
RocketCell™ S2 XF Supplement (100X)

thewellbio.com/product/rocketcell-s2-xf-supplement



3.7.2.1

RocketCell™ S3 XF Supplement (50X)

Chemically Defined, Xeno-Free N2-B27 Like Premixed Supplement



Cat. No.: RCS3

INTRODUCTION

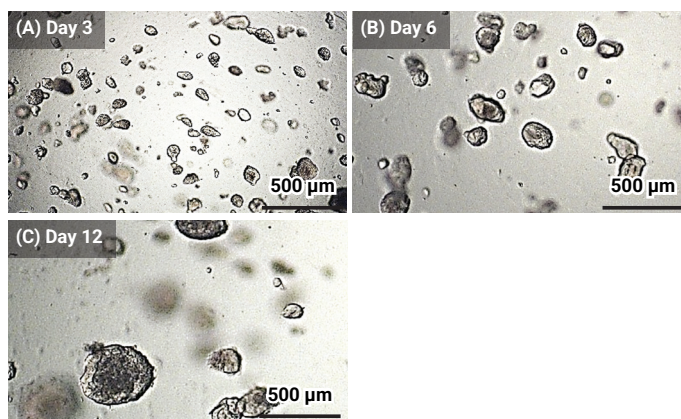
RocketCell™ S3 XF Supplement is a ready-to-use, 1:1 premix of the RocketCell™ S2 XF (N2-like) and S1 XF (B27-like) formulations – a single-component solution for culture paradigms that require both supplements simultaneously. The combination of N2 and B27 is a cornerstone of modern serum-free culture, appearing in media formulations across an exceptionally broad range of applications including neural, epithelial, and cancer models, as well as organoid and tumoroid systems across multiple tissue types. RocketCell™ S3 XF delivers this established dual-supplement framework in a fully xeno-free, chemically defined format.

FEATURES

- **Synergistic dual-supplement performance** – Combining the complementary strengths of both formulations delivers superior cell viability and performance compared to either supplement used alone
- **Ready-to-use convenience** – Eliminates the manual mixing step, reducing pipetting variability and preparation time in high-throughput or time-sensitive workflows
- **Broad application range** – Supports neural stem cell expansion, iPSC-derived neuron maturation, cancer stem cell maintenance, and organoid and tumoroid culture across multiple tissue types including intestinal, colonic, pancreatic, lung, retinal, and liver models
- **3D and co-culture compatible** – Formulated for stability and performance within VitroGel® hydrogel-based 3D culture systems, supporting complex co-culture and organoid model development
- **Consistent lot-to-lot quality** – All components premixed under controlled conditions to ensure exact ratio and concentration across every lot

Product	Cat No.	Size
RocketCell™ S3 XF Supplement (50X)	RCS3	10 mL

DATA AND REFERENCES



VitroGel® ORGANOID supports intestinal organoid generation out of cell clusters. (A) Cell clusters develop clear edged structures within 72hrs (3 days) in VitroGel® ORGANOID. (B) Healthy young organoids formation in 6 days. (C) Mature intestinal organoids in VitroGel® ORGANOID.

Learn more about
RocketCell™ S3 XF Supplement (50X)

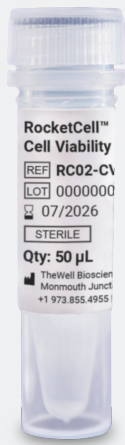
thewellbio.com/product/rocketcell-s3-xf-supplement



5.2

RocketCell™ Cell Viability Enhancer (1000X)

Defined formulation designed to boost survival and recovery of iPSCs, NSCs, and organoids in 2D and 3D culture



Cat No.: RC02-CV

INTRODUCTION

RocketCell™ Cell Viability Enhancer is a proprietary, high-potency small molecule cocktail engineered to maximize the survival and metabolic recovery of sensitive cell types, including but not limited to: induced pluripotent stem cells (iPSCs), other iPSC-derived cells such as neural stem cells, and organoids.

While traditional ROCK inhibitors like Y-27632 provide basic survival signals, RocketCell™ Cell Viability Enhancer utilizes a synergistic approach that significantly accelerates post-passaging growth and colony formation. This reagent is designed to be used in 2D and 3D cultures.

FEATURES

- Superior growth kinetics - outperforms Y-27632 and Thiazovivin (TZV), in long-term expansion assays.
- Optimized for use during passaging, thawing, and cryopreservation to ensure maximum plate-down efficiency.
- Actively assists cells in recovering from the metabolic stress of detachment and enzymatic dissociation.

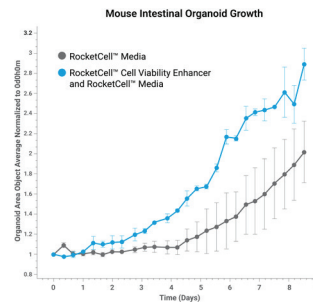
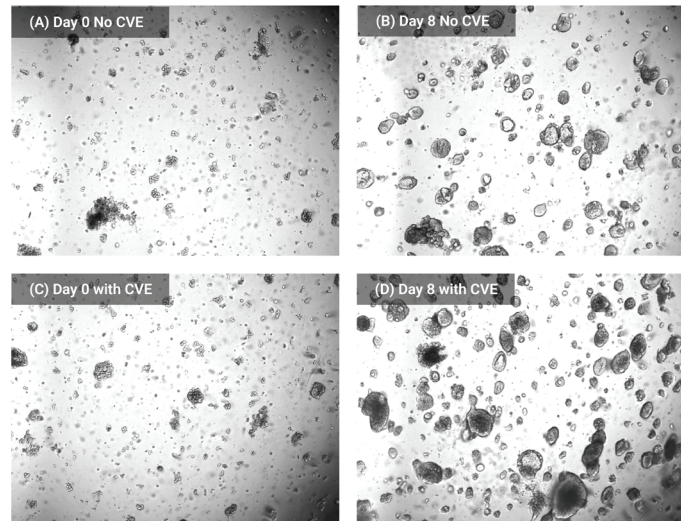
Product	Cat No.	Size
RocketCell™ Cell Viability Enhancer (1000x)	RC02-CV	50 µL
	RC02-CV500	500 µL

Learn more about
RocketCell™ Cell Viability Enhancer
(1000X)

thewellbio.com/product/rocketcell-cell-viability-enhancer/



DATA AND REFERENCES



RocketCell™ Cell Viability Enhancer Improves Intestinal Organoid Recovery & Growth

Mouse intestinal organoids (P6) were passaged and re-cultured in VitroGel® ORGANOID 5 using RocketCell™ Organoid Xeno-Free Essential-Core Medium with or without RocketCell™ Cell Viability Enhancer. Organoids cultured with the Cell Viability Enhancer showed improved recovery and significantly greater growth over 8 days compared to cultures without the enhancer.



4.2

Culture Vessels

VitroPrime™ are premium portfolio of cell culture plates/vessels engineered for both 2D and advanced 3D applications, including organoids, spheroids, stem cell models, and cell invasion assays. Designed with precision, each plate supports reliable and scalable workflows across diverse cell culture systems.

4.2.1

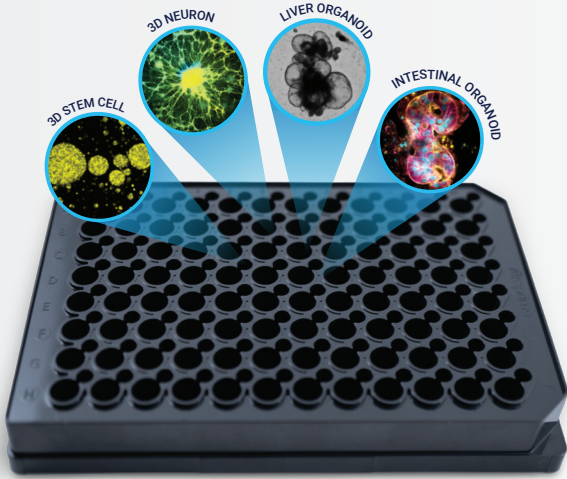
vitroprime

3D Culture and Imaging Plates

A premium cover-glass bottom plate for zero sample disruption 3D cell culture workflow: From cell seeding to high-resolution imaging.

INTRODUCTION

VitroPrime™ 3D Culture and Imaging Plates are premium-tier vessels engineered to streamline end-to-end workflows for hydrogel-based 3D culture. By integrating every step from cell embedding and matrix polymerization to long-term culture, downstream immunofluorescence (IF) staining, and high-resolution imaging into a single high-performance platform, VitroPrime™ minimizes sample loss and ensures consistent, reproducible results.



Cat. No:
VP-3D24W5



Cat. No:
VP-3D6W5



Cat. No:
VP-3D96W5

Common Challenges when Using Regular Cell Culture Plates	VitroPrime™ 3D Culture and Imaging Plate Advantages
Unstable and Weak Gel Attachment	Anti-Floating & Anti-Rotation Technology
Disruptive Medium Exchange	Disturbance-Free Medium Exchange
Labor-intensive and Fragmented Workflow	End-to-End Workflow Integration
Poor Image Quality	Elite Optical Clarity
Not Optimized for Automation	Automation Ready

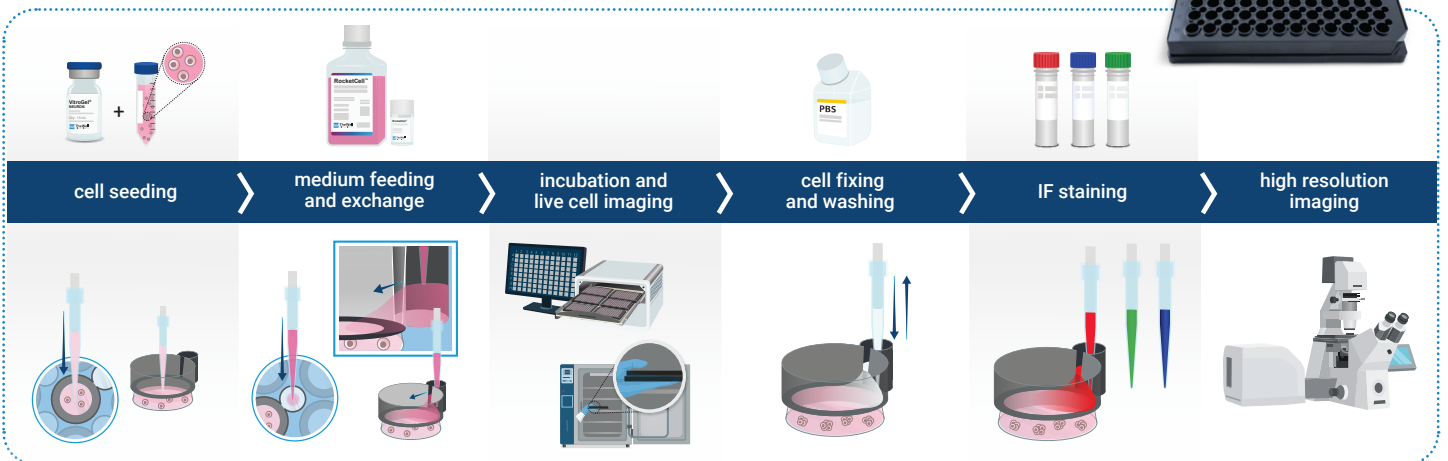


Scan the QR to watch!

Discover VitroPrime™ 3D Culture & Imaging Plate: Premium Plate for In-Plate 3D Culture & High-Content Imaging

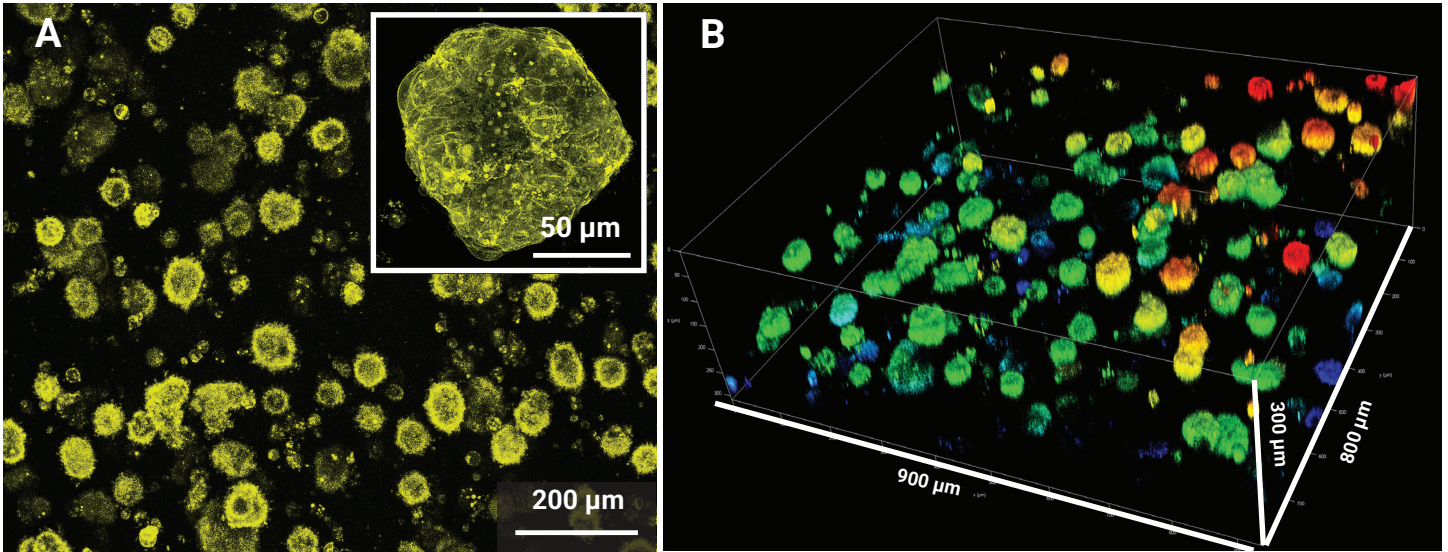


End-to End "In-Plate" Workflow for Zero Sample Disruption. From cell seeding, medium exchange, fixation, staining to high-resolution imaging, samples remain undisturbed/removed from the plate.



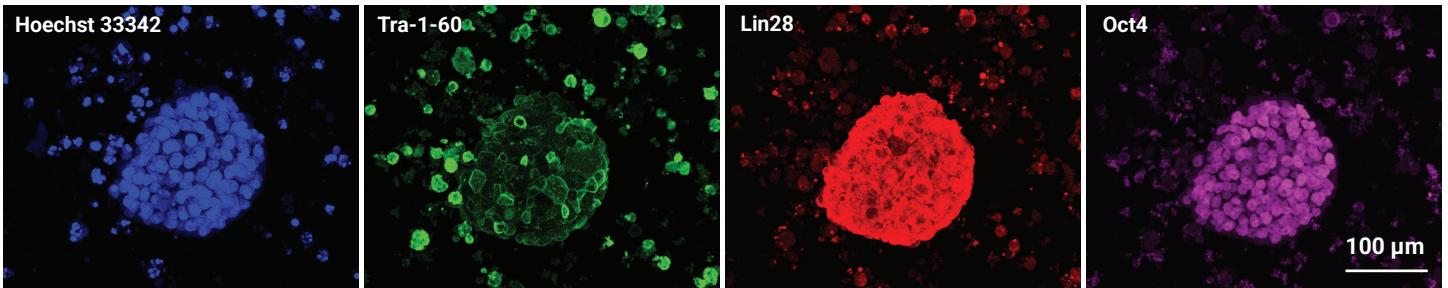
DATA AND REFERENCES

iPSCs



Live Cell Surface Immunofluorescent Staining of Human iPSCs Grown in RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit and VitroPrime™ 3D Culture and Imaging Plate.

iPSCs (100k/well) from 2D sources were plated in 24-well VitroPrime™ 3D Culture and Imaging Plate. After 7 days, the medium was removed and replaced with media containing a diluted anti-EPCAM-PE-Alexa594-labeled antibody. The mixture was incubated for 1 hour at 37 °C, and then the well was rinsed three times with 5 min incubation with 0.5 mL of Growth Media. The well was imaged on a Leica MICA confocal microscope (A). The rendered image (B) is 300 microns deep, with a field approximately 800 x 900 microns.



Indirect Immunofluorescence of Pluripotency Marker on iPSCs Grown RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit and VitroPrime™ 3D Culture and Imaging Plate.

iPSCs (100k/well) were grown for 7 days in 24-well VitroPrime™ 3D Culture and Imaging Plate, fixed, and stained with pluripotency markers Tra-1-60, Lin28, and Oct4 using Alexa Fluor 488, 594, and 647 secondary antibodies. Images were captured using a Leica MICA confocal microscope. These results confirm that the RocketCell™ 3D iPSC Growth Kit provides a supportive 3D microenvironment for maintaining pluripotency.

Product	Quantity	Cat. No
VitroPrime™ 3D Culture and Imaging Plate, 6-well	5 packs/case	VP-3D6W5
VitroPrime™ 3D Culture and Imaging Plate, 24-well	5 packs/case	VP-3D24W5
VitroPrime™ 3D Culture and Imaging Plate, 96-well	5 packs/case	VP-3D98W5

Learn more about
VitroPrime™ 3D Culture and Imaging Plate

thewellbio.com/product/vitroprime-3d-culture-and-imaging-plate/



4.2.2

vitroprime Spread-Attach Plates



Unique surface treated for superior hydrogel spreading, adherence, and uniform surface

INTRODUCTION

Offering unparalleled advantages for hydrogel-based 3D and 2D cell culture applications, the **VitroPrime™ Spread-Attach Plates**, with a unique surface treatment for superior hydrogel spreading, adherence, and uniform surface to eliminate the edge effect, solve the floating issue, and uneven cell attachment to help promote rapid cell growth and improve cell yields.

When used with the VitroGel® hydrogel system, achieve more reproducible, consistent data even for challenging cell types requiring more uniform cell adherence and “unlock” for full automation potential.

Available in the following sizes:

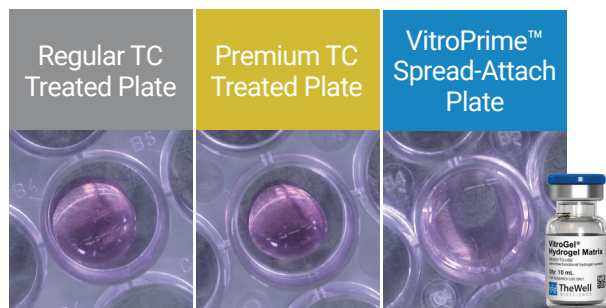
- 6-well (VP-SA6W)
- 12-well (VP-SA12W)
- 24-well (VP-SA24W)
- 48-well (VP-SA48W)
- 96-well (VP-SA96W)

FEATURES

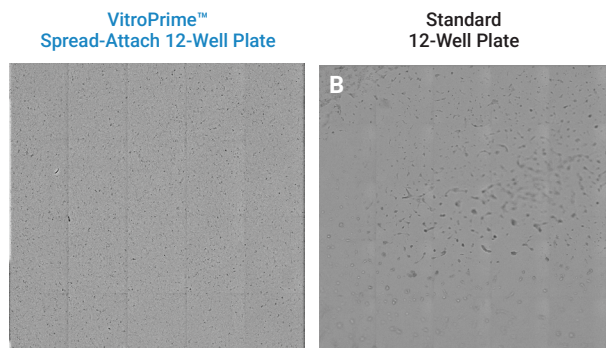
- **Superior Hydrogel Adherence.** Promotes hydrogel attachment to address floating issues which results to even imaging and ensure consistency.
- **Homogeneous Hydrogel Spreading.** Achieve consistent surface coating and prevent edge effects that hinder high-throughput applications.
- **Uniform Hydrogel Surface.** Obtain reproducible and consistent results by ensuring even cell attachment throughout the hydrogel surface.

DATA AND REFERENCES

Homogeneous Hydrogel Spreading



Uniform Hydrogel Surface



A comparison of two 25-stitched z-planes within a well of the 12-well plates. A. VitroPrime™ Spread-Attach 12-Well Plate shows a flat hydrogel surface, presenting homogeneous cell spreading and attachments on the same plane. B. The standard 12-well plate shows an uneven hydrogel surface by showing attached cells in different focus planes.

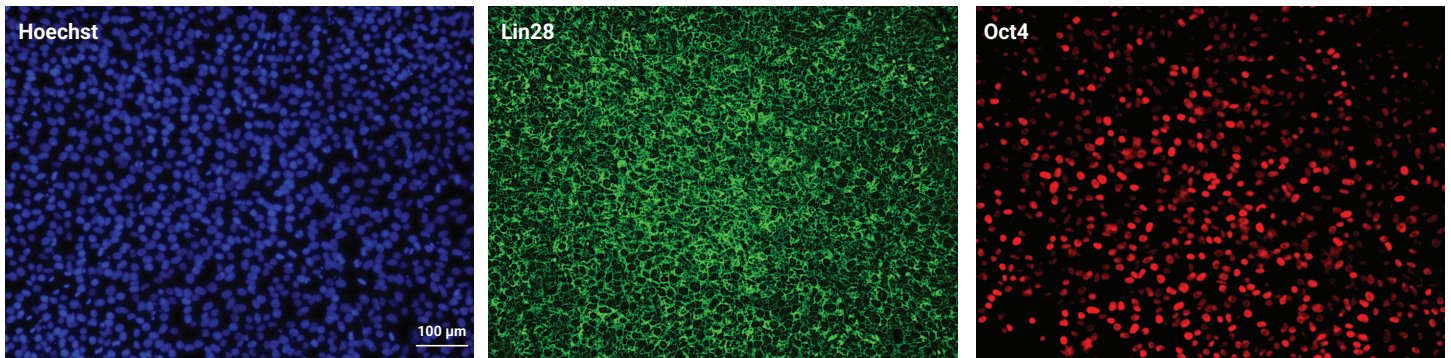
Product	Quantity	Cat. No
VitroPrime™ Spread-Attach Plate, 6-well	5 packs/case	VP-SA6W5
	50 packs/case	VP-SA6W
VitroPrime™ Spread-Attach Plate, 12-well	5 packs/case	VP-SA12W5
	50 packs/case	VP-SA12W
VitroPrime™ Spread-Attach Plate, 24-well	5 packs/case	VP-SA24W5
	50 packs/case	VP-SA24W
VitroPrime™ Spread-Attach Plate, 48-well	5 packs/case	VP-SA48W5
	50 packs/case	VP-SA48W
VitroPrime™ Spread-Attach Plate, 96-well	5 packs/case	VP-SA96W5
	50 packs/case	VP-SA96W

Learn more about
VitroPrime™ Spread-Attach Plates

thewellbio.com/VITROPRIME-SPREAD-ATTACH-PLATE



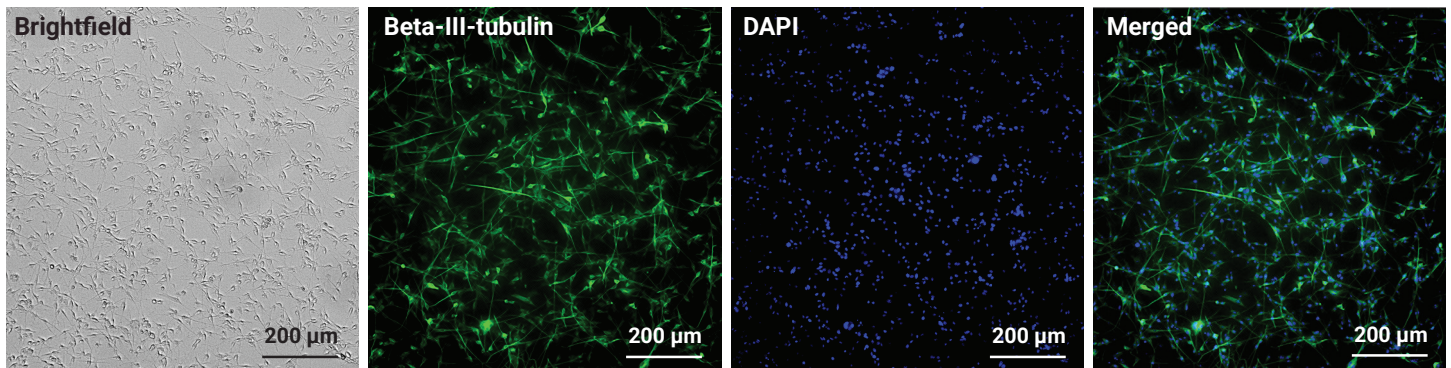
iPSCs



iPSCs grown in RocketCell™ iPSC Xeno-Free Growth Medium on CytoGrow™ Vitronectin-coated VitroPrime™ Spread-Attach, 24-well plates were processed for indirect immunofluorescence using standard techniques.

Samples were stained with a combination of anti-Oct4 and anti-Lin28 followed by goat-anti-rabbit-Alexa Fluor 594, and –mouse. IgG1-Alexa Fluor 488. Samples were then counterstained for 10 min using Hoechst 33342 (2.5 µg/mL). Samples were visualized using a Keyence BZ-X system. These results demonstrate that the RocketCell™ iPSC Xeno-Free Growth Medium can maintain expected and canonical pluripotent markers.

NSCs



VitroGel® NEURON hydrogel promotes neuronal neuroblast differentiation.

B35 neuronal neuroblast cells were seeded onto the VitroGel® NEURON-coated wells of the VitroPrime™ Spread Attach, 24-well plates. After 24 hours, the cells were serum-starved to induce differentiation. Immunofluorescence staining of neuronal cultures was performed to evaluate the presence of the neuron-associated marker beta-III-tubulin on day 7 post-differentiation induction. The cultures were visualized with the Keyence BZ-X system.

4.2.3

VitroPrime™ Ultra-Low Attachment, U Bottom, 96-Well Plate

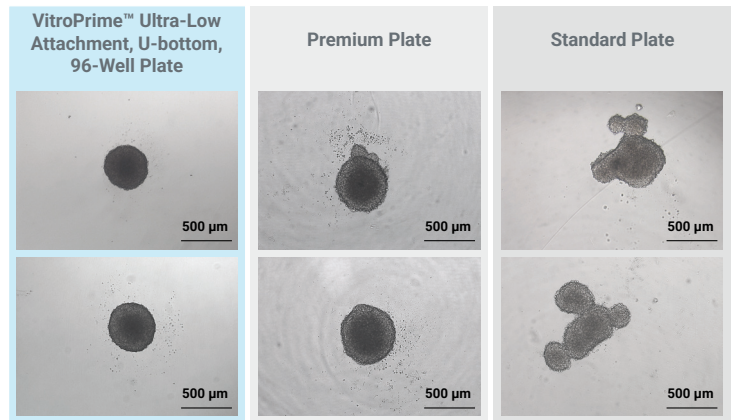
Premium U-bottom cell culture plate with unique surface treatment that prevents cell adhesion and enables spheroid formation, organoids, and tumoroids.

FEATURES

- Premium low-attachment surface coating for 3D cultures
- Reduced cell adhesion
- Uniform surface treatment
- Supports automated imaging systems



Cat. No: VP-ULA96U-8



Learn more about VitroPrime™ Ultra-Low Attachment Plate

thewellbio.com/VITROPRIME-ULA-PLATE



4.2.4

VitroPrime™ Cell Culture Inserts

Premium cell culture inserts that promote enhanced attachment, growth, and differentiation of a wide range of cell types. Ideal for migration and invasion assays, co-culture, drug screening, and tissue engineering.

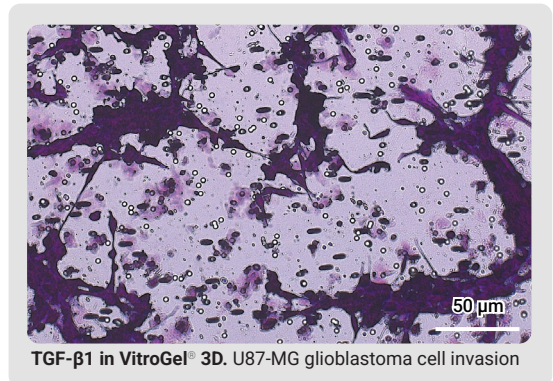
FEATURES

- Excellent-quality images
- Even pore sizes throughout the membrane provide accurate results when evaluating cell invasion.
- Medium can be added to the outer wells without removing the inserts.
- The inserts support and sustain proper solidification of the hydrogel matrices.



Available in the following sizes:

- 3 µm (VPE3-24-4)
- 8 µm (VPE8-24-4)

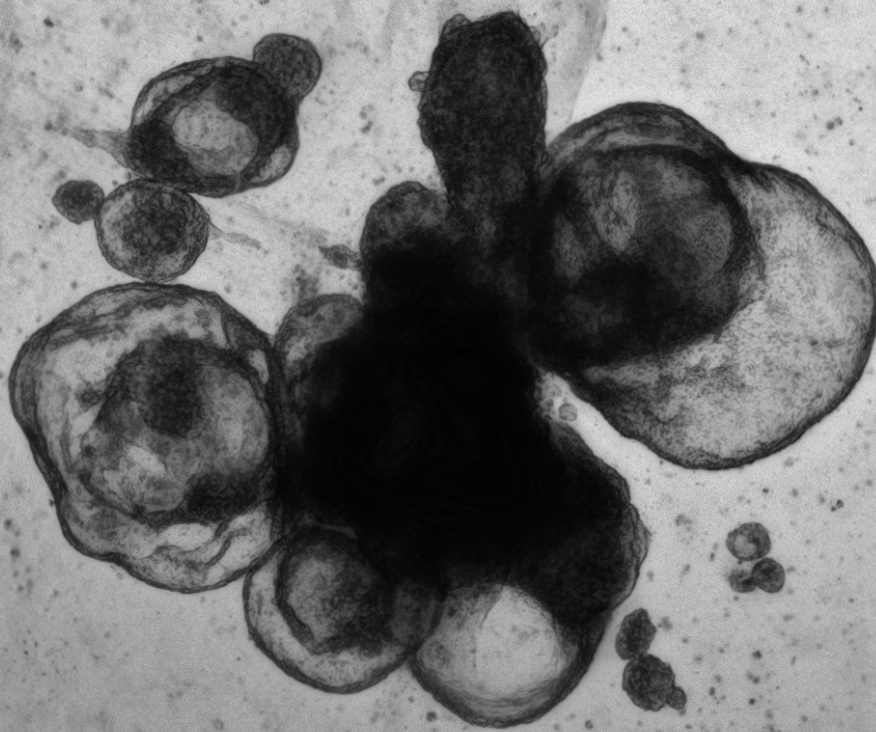


TGF-β1 in VitroGel® 3D. U87-MG glioblastoma cell invasion

Learn more about VitroPrime™ Cell Culture Inserts

thewellbio.com/VITROPRIME-CELL-CULTURE-INSERT





4.3

Cell Recovery

Unlike most hydrogel matrices (synthetic or animal-based), which often require harsh chemicals or temperature changes that may harm the cells and result in low cell recovery yields, our enzyme-free **VitroGel® Cell Recovery Solution** and **VitroGel® Organoid Recovery Solution** simplify the process. Cells can be harvested at neutral pH and 37°C, ensuring high yield and cell viability.

4.3.1

VitroGel® Organoid Recovery Solution

Non-enzymatic harvesting solution for cells and organoids

For Quick Recovery

INTRODUCTION

VitroGel® Organoid Recovery Solution is a non-enzymatic cell harvesting solution for quick and efficient recovery of 3D cells or organoids cultured with either VitroGel® hydrogels or an animal-based ECM.

For cells/organoids cultured in an animal-based ECM, achieve fast 2-minute ECM dissociation safely and efficiently.



Cat. No.: MS04-100, MS04-500

FEATURES

- High cell recovery and viability
- Works with cells/organoids cultured in VitroGel® hydrogels or an animal-based ECM.
- Long shelf life. Stable for 24 months.

Learn more about VitroGel® Organoid Recovery Solution

thewellbio.com/organoid-recovery/



Discover 3D and 2D Cell Harvesting with VitroGel®

thewellbio.com/3d-cell-culture-hydrogel/cell-harvesting/



Unlike most hydrogel matrices (synthetic or animal-based), which often require harsh chemicals or temperature changes that may harm the cells and result in low cell recovery yields, our enzyme-free VitroGel® Cell Recovery Solution and VitroGel® Organoid Recovery Solution simplify the process. Cells can be harvested at neutral pH and 37°C, ensuring high yield and cell viability.

Product	Cat No.	Size
VitroGel® Organoid Recovery Solution	MS04-100	100 mL
	MS04-500	500 mL

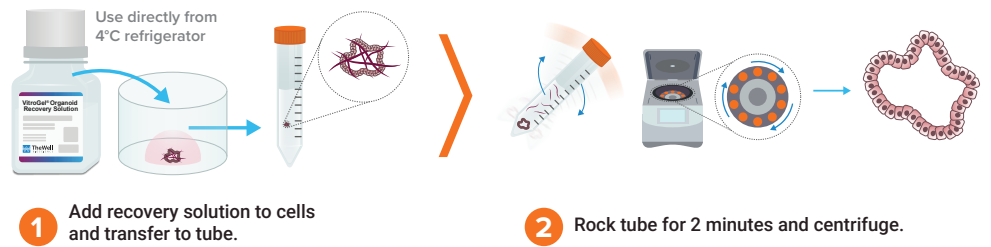
VitroGel® Organoid Recovery Solution compared to others

	VitroGel®	Company C	Company R	Company S
Dissociation From Animal-based ECM	2 min	≈60 min	≈60 min	>30 min
High Cell Recovery & Cell Viability	●	◐	◐	◐
Room Temp Operation / Easy-To-Use	●			◐
Cell Recovery from 2D ECM Coating Plate	●			
No Cold Pack Shipping	●			●
Storage	2-8°C	2-8°C	2-8°C	15-35°C
Shelf Life	24 mo	3 mo	2 mo	N/A

Cell/Organoid Recovery from Animal-Based ECM* (e.g. Matrigel)

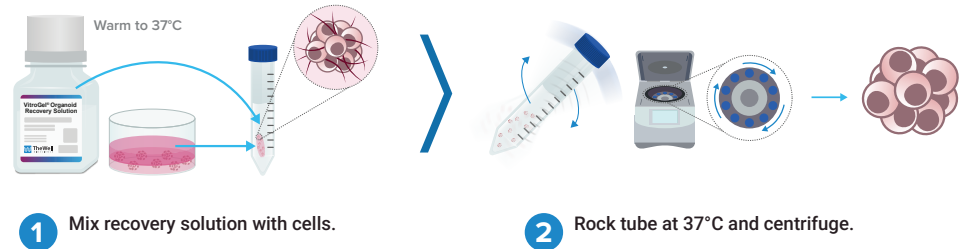
- Fast 2 minute ECM dissociation
- 10 min protocol

*Extracellular matrices like Matrigel, Cultrex, and Geltrex



Cell/Organoid Recovery from VitroGel® Hydrogels

- 5-15 min protocol
- Improved formulation over VitroGel® Cell Harvesting Solution (MS03-100)



DATA AND REFERENCES

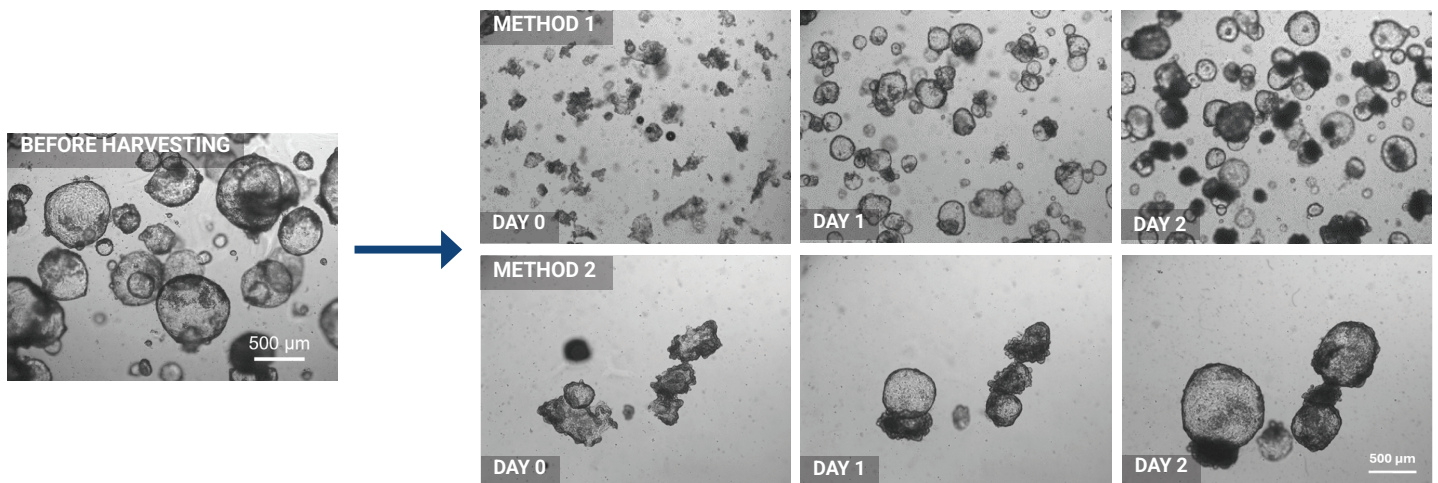


Figure 12. Organoids recovered from Matrigel using VitroGel® Organoid Recovery Solution with two methods.

Method 1: Re-suspend organoids in VitroGel® Organoid Recovery Solution by pipetting to break organoids into small fragments for sub-culture/expansion.

Method 2: Rocking the tube with organoids and VitroGel® Organoid Recovery Solution mixture without using a pipette to harvest the intact organoids.

In both, VitroGel® Organoid Recovery Solution was kept in a 4°C refrigerator to maintain a low temperature before use. The organoids/Matrigel and VitroGel® Organoid Recovery Solution mixture were incubated at room temperature for 2 minutes before centrifuging. Day 0 images show the morphology of organoids right after harvesting with two different methods.

4.3.2

VitroGel® Cell Recovery Solution

Enzyme-free cell harvesting solution to recover cells from the hydrogel in 20 minutes



Cat. No.: MS03-100

For Gentle Recovery

INTRODUCTION

VitroGel® Cell Recovery Solution is a gentle, non-enzymatic solution designed for the efficient recovery of cells, spheroids, and organoids from both 2D and 3D cultures. It helps maintain high cell viability while preserving cell morphology and structural integrity.

Ideal for iPSC 3D culture and organoid applications and enables the recovery of intact cell aggregates and tissue fragments.

FEATURES

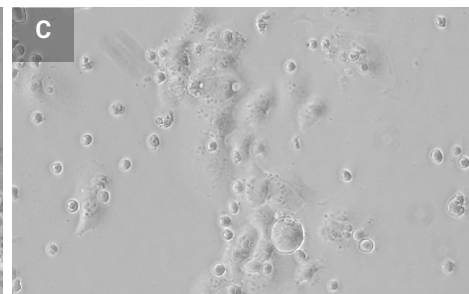
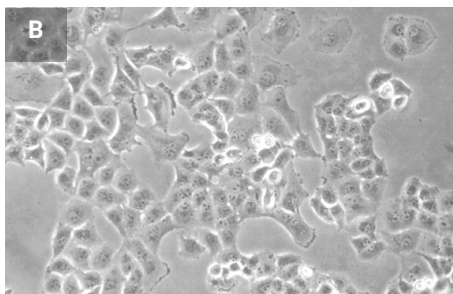
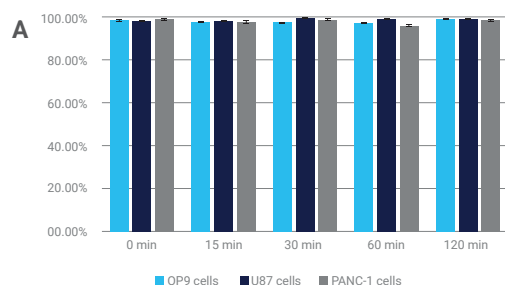
- High cell viability and preserves morphology
- Recovers intact cell aggregates and tissue fragments
- Suitable for suspension cultures and sensitive recovery workflows
- Fast and easy protocol with no enzymatic digestion required

Learn more about
VitroGel® Cell Recovery Solution
thewellbio.com/cell-recovery/

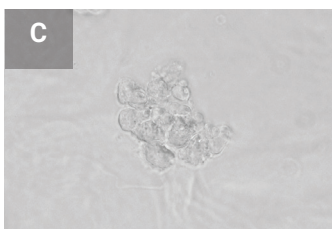
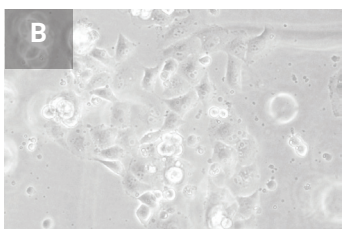


Product	Cat No.	Size
VitroGel® Cell Recovery Solution	MS03-100	100 mL

DATA AND REFERENCES



A) PANC-1 cells growth on 3D hydrogel before harvested by VitroGel® Cell Recovery Solution; B) PANC-1 cells have been harvested from 3D hydrogel by using VitroGel® Cell Recovery Solution and subculture on the surface of hydrogel (day 2); C) PANC-1 cells have been harvested from 3D hydrogel by using the cell recovery solution and 3D subculture in the hydrogel system again (day 2).



A) PANC-1 cells growth on 2D well plate before transfer to cell recovery solution; B) PANC-1 cells suspended in cell recovery solution for 24 hours then re-culture on 2D well plate for 5 days. Cells has been successful re-culture after suspend in cell recovery solution for 24 hours.

A fluorescence microscopy image showing a dense population of cells. The cells are stained with two different fluorescent dyes, resulting in a mix of green and red signals. The green signal is more prominent, suggesting a higher proportion of live cells, while the red signal indicates the presence of dead cells. The background is dark, making the individual cells stand out.

4.4

Downstream Analysis

Cell viability analysis is essential for evaluating stem cell health, survival, and culture performance. By measuring the proportion of live and dead cells, researchers can assess culture conditions, optimize protocols, and ensure reliable results for stem cell expansion, differentiation, and downstream applications.

4.4

Cyto3D® Live-Dead Assay Kit

Versatile, live/dead assay cell viability analysis for 3D and 2D cell culture



Cat. No.: BM01

INTRODUCTION

The Cyto3D® Live-Dead Assay Kit is a versatile live/dead assay for 3D and 2D Cell Culture, Organoids, Spheroids, Stem Cells, and Fluorescence Microscopy. It is used to determine the live/dead nucleated cells using a quick one-step staining procedure for analysis on a dual-fluorescence system. The Cyto3D® Live-Dead Assay Kit is recommended for viability analysis of cells/organoids cultured in 3D, 2D coating, and on monolayer and works with cells cultured in animal-based ECMs and other hydrogel systems.

FEATURES

- Excellent for 3D/2D culture, Organoids, Spheroids, and fluorescence microscopy.
- No unevenness and no background staining for clear image resolution.
- Excellent dye penetration for large 3D constructs
- Fast, one-step staining procedure.

Product	Cat No.	Size
Cyto3D® Live-Dead Assay Kit	BM01	1 mL



5-10
MINUTES
Incubation



1 Add 2 µL of Cyto3D® to every 100 µL total volume in a well

2 Ready for detection.



Customer Testimonial



"When we used the Cyto3D® Live-Dead Assay Kit, we were able to obtain a very clear image without any unevenness in the well and almost no background staining on the gel.

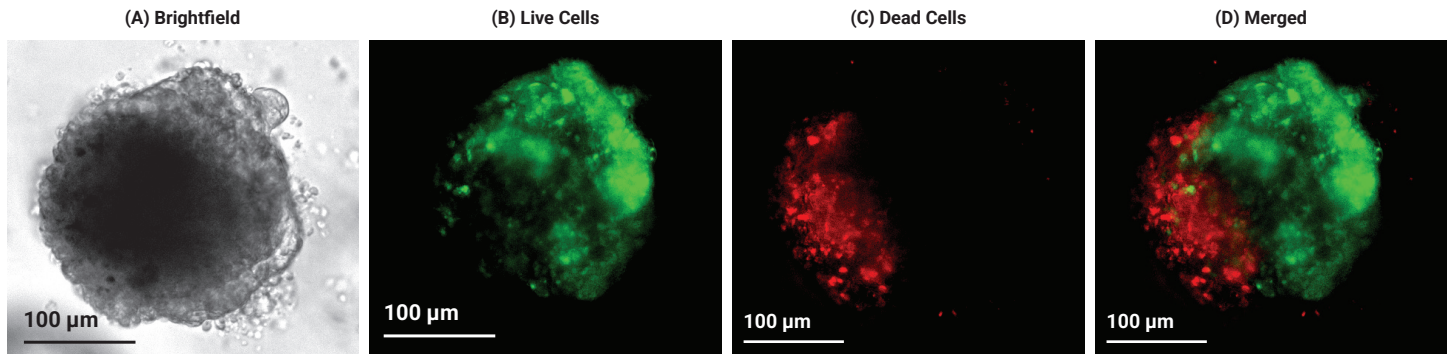
We tried various reagents, but it was difficult because uneven staining occurred within or between the wells."

– from a Regenerative Medicine Company

Learn more about
Cyto3D® Live-Dead Assay Kit
thewellbio.com/CYT03D

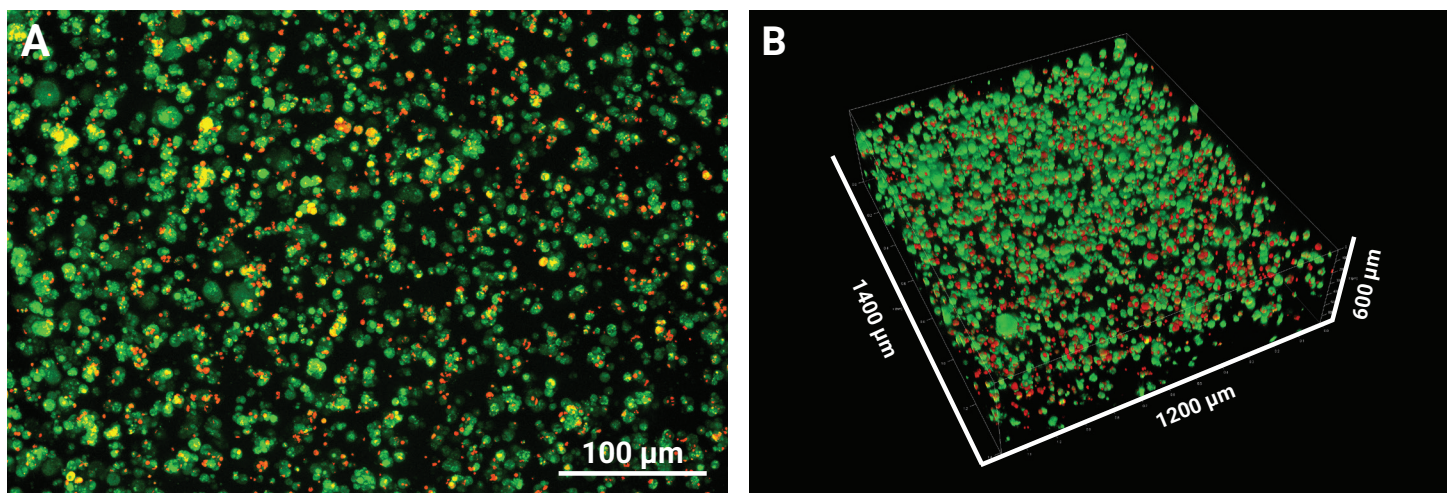


DATA AND REFERENCES



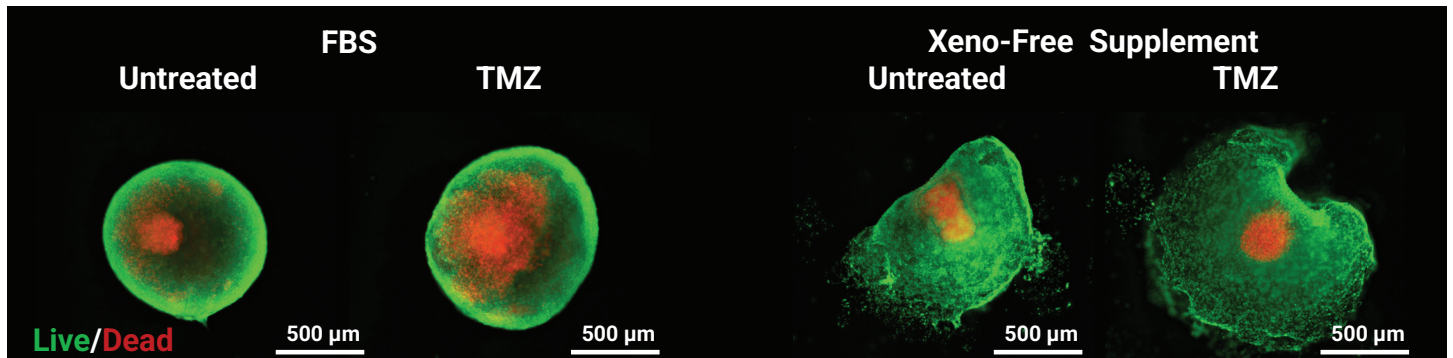
Live-dead cell viability images: Intestinal organoids stained with Cyto3D® Live-Dead Assay Kit.

Intestinal organoids were cultured in regulated conditions for 5 days. Six microliters of Cyto3D® reagent were mixed with organoid culture media (each well includes 150 µL of organoid culture media and 150 µL of hydrogel volume). The mixture was incubated at 37°C for 10-15 min, and the cells were observed under a fluorescence microscope. (A) A bright field image of a mature intestinal organoid. Images show live cells (B: Green) and dead cells (C: Red) in a mature intestinal organoid.



Cyto3D® Live-Dead Assay for Monitoring the Health of IPSC (HFF-1VL, TheWell Bioscience) Grown in RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit.

IPSCs (100k/well) from 2D sources were plated in 24-well, VitroPrime™ 3D Culture and Imaging Plate. After 7 days, the medium was removed and replaced with media containing 1:50 diluted Cyto3D® Live-Dead Assay solution. After 30 min, the well was imaged on a Leica MICA confocal microscope.



Viability analysis of co-culture model of GBM cells and endothelial cells. U87 GBM spheroids were formed in VitroPrime™ Ultra-Low Attachment Plates and embedded in VitroGel® EMT hydrogel. Endothelial cells were added on Day 1 to establish co-cultures. After 21 days, tumoroids were treated with TMZ (1 mM) for 24 hours, and viability was assessed using the Cyto3D® Live-Dead Assay Kit.

5

Services

TheWell Bioscience offers customized stem cell culture services to help researchers establish and optimize reproducible workflows using our xeno-free VitroGel® platform. Our scientists work closely with your team to develop tailored solutions for stem cell expansion, differentiation, organoid generation, and downstream analysis.



Expert Support for Your 3D Cell Culture Research

Developing successful 3D cell culture models often requires time-consuming optimization and specialized expertise. TheWell Bioscience offers customized 3D cell culture services to help researchers quickly establish and optimize advanced models using the VitroGel® xeno-free hydrogel platform.

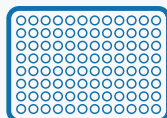
From stem cells and organoids to tumor models and invasion assays, our scientists work alongside your team to develop reproducible, physiologically relevant models tailored to your research goals. Whether you're starting a new project or troubleshooting an existing workflow, we provide the expertise, tools, and support needed to accelerate your research.

Service Capabilities



3D Model Development Service

Develop customized 3D cell culture models to support your research, from feasibility studies to validated models with SOPs and functional data.



ScreenReady™ 3D Cell Plate Service

Provide ready-to-use VitroPrime™ culture vessels and customized cell processing services tailored to your research workflow.



Drug Screening Service

Evaluate drug screening studies in 3D models, including IC50 analysis, dose-response profiling, and combination therapy evaluation.



Custom Hydrogel Synthesis Service

Design bespoke hydrogel formulations, peptide-modified matrices, and bioinks to meet unique research requirements.



Custom Medium Formulation Service

Create custom cell culture media designed to support the growth and performance of specific cell types under defined culture conditions.



Training & Consulting Service

Offer hands-on workshops, customized training, and scientific consulting to help researchers optimize their workflow therapy evaluation.

Why Partner with TheWell Bioscience?

By combining scientific expertise with the VitroGel® platform, TheWell Bioscience helps researchers create more reliable, physiologically relevant 3D models while reducing development time and experimental variability.

For more information,
fill out this form

thewellbio.com/3d-cell-culture-service/





References

TheWell Bioscience offers resources for different applications .
Visit our webstie to know more.

APPLICATION NOTES

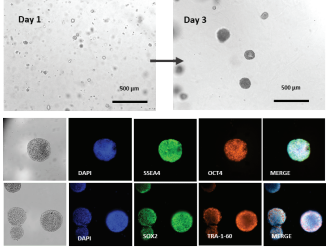
thewellbio.com/applications/



Culturing and maintaining human pluripotent stem cells (hPSCs) directly from cryopreservation using the xeno-free, hydrogel-based VitroGel® STEM

New hPSCs Expansion Method – Direct from Liquid Nitrogen to 3D Culture Using a Xeno-free Hydrogel – VitroGel® STEM

thewellbio.com/application-notes/hpsc-expansion-with-xeno-free-hydrogel/



Inside-Out or Outside-In? How Organoid Polarity Shapes Nutrition and Drug Discovery Research

Inside-Out or Outside-In? How Organoid Polarity Shapes Nutrition and Drug Discovery Research

thewellbio.com/application-notes/xeno-free-organoid-generation-workflow/



WEBINARS

[.thewellbio.com/category/webinars/](http://thewellbio.com/category/webinars/)



ON-DEMAND WEBINAR: RocketCell™ for 3D iPSC Culture | TheWell BioScience

3D iPSC Culture: RocketCell™ 3D iPSC Xeno-free Complete Growth Kit

All-in-one XENO-FREE KIT with optimized matrix, medium, and reagents for 3D iPSC expansion.

SPEAKER
Rick Cohen, Ph.D.
Principal Scientist | TheWell BioScience



3D iPSC Culture: RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit – An all-in-one kit with optimized matrix, medium, and reagents, for 3D iPSC expansion

thewellbio.com/webinars/3d-ipsc-culture-rocketcell-3d-ipsc-growth-kit-an-all-in-one-xeno-free-platform/



ON-DEMAND WEBINAR: Xeno-Free Media for hMSC Culture | TheWell BioScience

Robust and Reproducible Expansion of Human Mesenchymal Stem Cells Using RocketCell™ hMSC Xeno-Free Complete Medium

High-performance, chemically-defined kit for superior expansion of human mesenchymal stem cells (hMSC)

SPEAKER
Rick Cohen, Ph.D.
Principal Scientist | TheWell BioScience

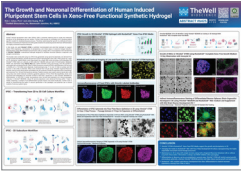


Robust and Reproducible Expansion of Human Mesenchymal Stem Cells using RocketCell™ hMSC Xeno-Free Complete Medium

thewellbio.com/webinars/expansion-human-msc-rocketcell-hmsc-xeno-free-complete-medium/



POSTERS



The Growth and Neuronal Differentiation of Human Induced Pluripotent Stem Cells in Xeno-Free Functional Synthetic Hydrogel

thewellbio.com/conferences/poster-presentations/growth-and-neuronal-differentiation-of-human-ipscs-in-xeno-free-vitrogel/

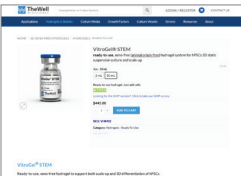


LANDING PAGES



Cell Culture and Scale-up of Human Pluripotent Stem Cells

thewellbio.com/applications/in-vitro/stem-cells/



The Growth and Neuronal Differentiation of Human Induced Pluripotent Stem Cells in Xeno-Free Functional Synthetic Hydrogel





thewellbio.com/conferences/poster-presentations/growth-and-neuronal-differentiation-of-human-ipscs-in-xeno-free-vitrogel/





TheWell
B I O S C I E N C E

3D CELL CULTURE AND BEYOND

 **866-3D-CELLS (973.855.4955)**  **info@thewellbio.com**  **thewellbio.com**  **thewell-bioscience**

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