

RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit



An all-in-one optimized kit for 3D expansion of pluripotent stem cells



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.



Xeno-Free and Chemically Defined Composition

Ensures high reproducibility, stability, and regulatory compliance for advanced research and translational use.



High-Density 3D Culture Capability

R3D hydrogel matrix supports up to 10× higher cell density than 2D culture, maximizing expansion efficiency.



Ready-to-Use and Room Temperature Stable

Operates without pre-coating or thawing steps, simplifying setup and improving ease of use.



The RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit is an all-in-one, fully defined, animal-component-free system optimized to support the **3D expansion of pluripotent stem cells (iPSCs and hESCs) in VitroGel® STEM hydrogel.**

This innovative 3D culture system **supports both single-cell and small-colony seeding** while maintaining **excellent post-passaging viability**. It enables alternate-day feedings and a **weekend-free schedule**, providing flexibility for diverse research schedules.

Formulated with xeno-free, **chemically defined components**, the growth medium ensures high stability and potency for consistent, long-term performance. The kit has been rigorously validated with multiple pluripotent stem cell lines, producing **uniform 3D colonies** that retain key pluripotency markers, including Lin28, Oct4, Nanog, and Tra-1-60.

Unlike traditional 2D culture systems, this ready-to-use 3D culture kit operates at room temperature with **no pre-coating required**. The 3D hydrogel matrix supports up to **10× higher cell seeding density** compared to 2D culture, enabling **ultra-high expansion capacity** while dramatically **reducing medium consumption** and culture vessel requirements.

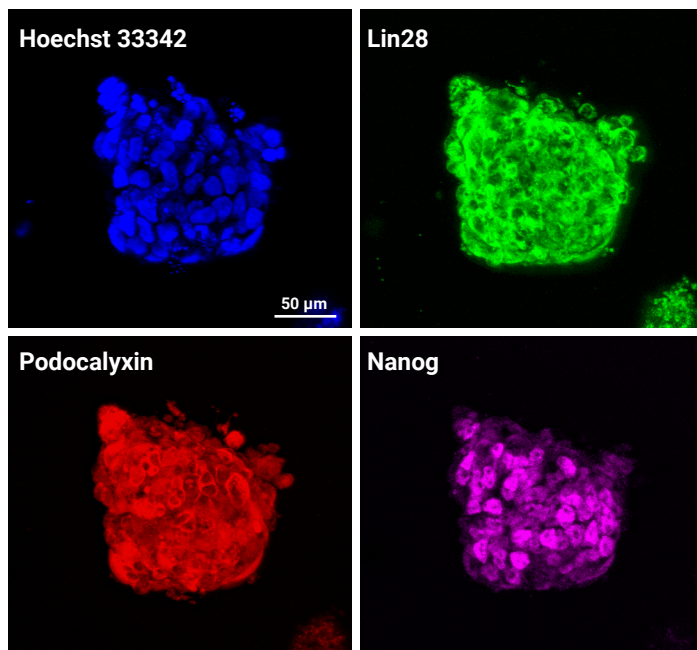


Figure 1: Direct Immunofluorescence Staining of iPSCs (HFF-1VL, TheWell Bioscience) Grown in RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit.

iPSCs (100k/well) were grown for 7 days in 24-well VitroPrime™ 3D Imaging Plates (Catalog #: VP-3D96W) before fixation and staining with directly labeled pluripotency markers Lin28 (Alexa 488), Podocalyxin (Alexa 594), and Nanog (Alexa 647). Images were captured using a Leica MICA confocal microscope. These results show that the RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit provides a supportive 3D environment for maintaining pluripotent stem cells, while the use of directly labeled antibodies enables faster and more efficient hydrogel-based sample processing.

Learn more about

RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit

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



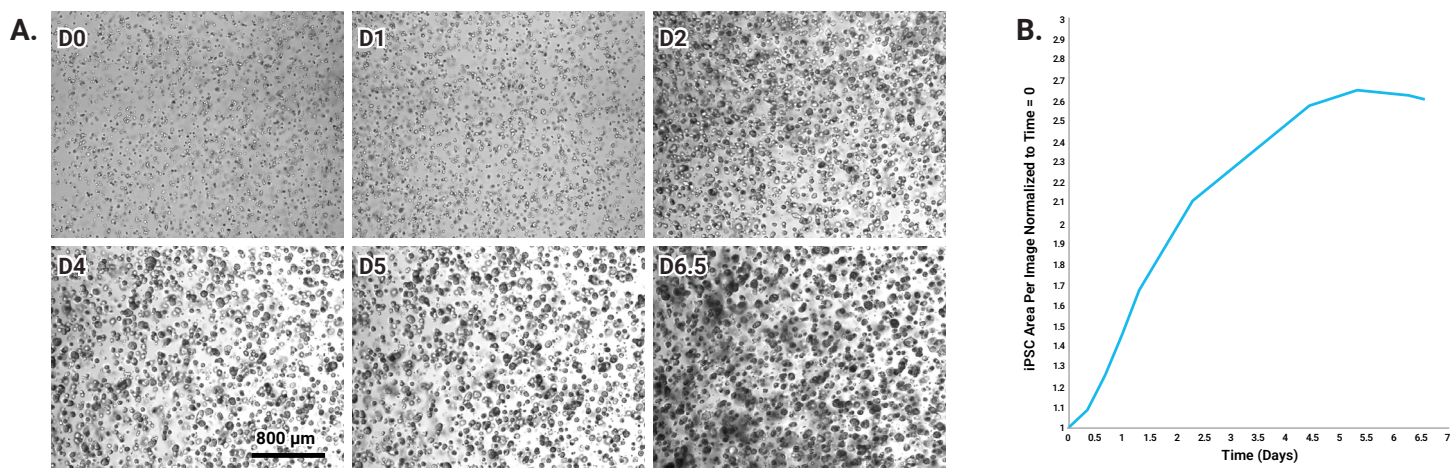


Figure 2: 3D Expansion of Human iPSCs in RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit. **A:** Time-lapse micrographs show human iPSCs transitioning from single cells and small aggregates into uniform 3D spheroids within the VitroGel® STEM hydrogel (seeded cells from a 2D source on Day 0). Spheroids exhibit consistent morphology and reach diameters of approximately 85–100 μ m after several days in culture. **B:** Quantitative analysis of spheroid growth demonstrates a steady increase in total spheroid area over time, reaching an average of nearly 300% expansion after 6.5 days, confirming robust and reproducible 3D proliferation under xeno-free culture conditions.

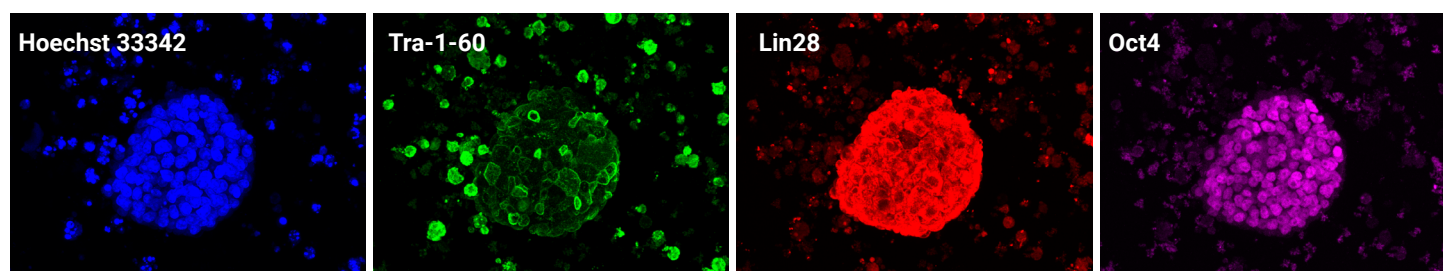


Figure 3: Indirect Immunofluorescence of Pluripotency Marker on iPSCs Grown in RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit. iPSCs (100k/well) were grown for 7 days in 24-well VitroPrime™ 3D Imaging Plates (Catalog #: VP-3D96W), fixed, and stained with pluripotency markers Tra-1-60, Lin28, and Oct4 using Alexa Fluor 488, 594, and 647 secondary antibodies. Images were captured using a Leica MICA confocal microscope. Results confirm that the RocketCell™ 3D iPSC Growth Kit provides a supportive 3D microenvironment for maintaining pluripotency.

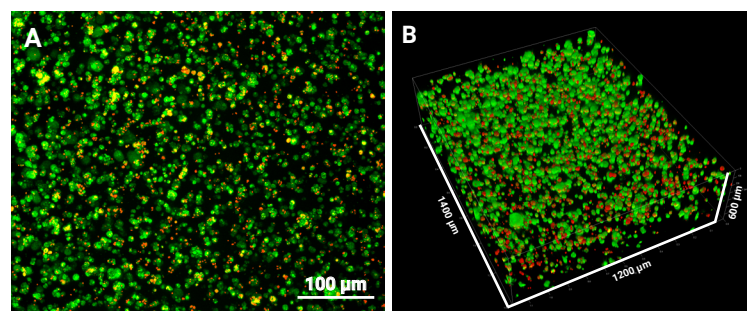


Figure 4: Cyto3D® Live-Dead Assay Kit for Monitoring the Health of iPSC (HFF-1VL, TheWell Bioscience) Grown in RocketCell™ 3D iPSC Xeno-Free Complete Growth Kit. iPSCs (100k/well) from 2D sources were plated in 24-well VitroPrime™ 3D Imaging Plates (Catalog #: VP-3D96W). After 7 days, the medium was removed and replaced with media containing 1:50 diluted Cyto3D® Live-Dead Assay solution. **(A) Maximum Intensity projection of the 600 micron Z-depth.** The same image is rendered in 3D **(B)** and in contrast to the 2D image, clearly shows the separation of the live iPSC colonies from the dead ones. These findings demonstrate that Cyto3D® protocol does not require any wash steps, and the need for proper 3D imaging techniques to analyze 3D cultures.

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	1 X 10 μ L
• RocketCell™ iPSC Xeno-Free Basal Medium	1 x 500 mL
• RocketCell™ iPSC Xeno-Free Supplement (50X)	1 x 10 mL

Related products



CytoGrow™ Growth Factors

Premium quality growth factors with research-friendly price for advanced 3D/2D cell culture and beyond.



VitroPrime™ Spread-Attach Plate

Supports exceptional 2D and 3D neuron growth. No PDL-coated plates required.

Plates Available:
6-well, 12-well, 24-well, 48-well, 96-well



VitroGel® Organoid Recovery Solution

Non-enzymatic cell harvesting solution to recover cells or organoids from hydrogel or an animal-based ECM within 15 minutes.



Cyto3D® Live-Dead Assay Kit

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



RocketCell™ iPSC Xeno-Free Growth Medium (MEDIUM ONLY KIT)

