Endless possibilities for standardized organoid culture

Gri3D[®]

Introducing Gri3D[®]

Gri3D[®] is a **ready-to-use** platform for high-throughput and **reproducible organoid culture**. Based on an array of ultra-dense U-bottom shaped **microwells** in hydrogel, single organoids are robustly generated in each microcavity and grown in **suspension-like** culture without a solid extracellular matrix. With multiple configurations available, there is a microwell size that will fit your organoid model.

With Gri3D[®] organoid culture has never been so easy.



Why adopt Gri3D[®] technology?

- Plug and play: ready-to-use polyethylene glycol (PEG) microwell plates
- Homogeneous organoids in one focal plane for high thoughput imaging
- Up to hundreds of microwells in a single well to scale up organoid generation
- SLAS/ANSI standard plate format to fit automation workflows
- Standardized organoid culture for easy implementation in screening
- Homogeneous cell seeding in a single pipetting step without centrifugation



Gri3D[®] features

Round-bottom microwells with extreme aspect ratio

Meniscus breaking features for homogeneous cell seeding



Cell seeding chamber for reproducible organoid growth

Pipetting port for safe medium change without organoid loss PEG-based hydrogel microwells:

- Naturally low attachment surface for efficient cell aggregation
- >95% water, allowing diffractionless imaging
- No solid ECM needed
- Multiple microwell sizes to accommodate any organoid type

Organoid culture on Gri3D®

Easy-to-use protocol

Cells aggregate reproducibly to generate uniform organoids in a single pipetting step



Workflow for the generation of organoid arrays on Gri3D[®]

- 1. Single cells sediment in the microcavities
- 2. Cells compact in suspensionlike culture*
- 3. Homogeneous organoids fully develop in a few days

* Optional: ECM can be diluted in media

Order yours
WWW. **SUN**BIOSCIENCE.com

Contact us enquiries@sunbioscience.ch

Download resources Application notes & protocols

Gri3D[®] for automatable downstream applications

Live-cell imaging

Organoids are positioned in predefined locations within the microwells, on the same focal plane, allowing simultaneous tracking of individual live organoids at high resolution.



Mouse intestinal arrays (Lgr5-GFP) development in time by brightfield and fluorescence imaging on imaging bottom Gri3D[®]96 400 μ m. Scale bars 200 μ m.

In situ immunostaining

All steps of immunofluorescence can be performed on $Gri3D^{\textcircled{m}}$ – from fixation to antibody incubation and imaging – and imaged in high-throughput with a fully automatable pipeline.



Mouse intestinal arrays stained and imaged on imaging bottom Gri3D[®]96 400 µm. Blue: DAPI, green: F-actin, red: LFABP. Scale bar 200 µm.

Cell harvesting

As cells grow in an open and solid matrix-free environment, they are easily harvested from the microwells with a simple pipetting step – no need for cumbersome extraction protocols. Single organoids or homogeneous organoid populations can then be processed for passaging or downstream analyses.



A single mouse intestinal organoid isolated from Gri3D $^{\circ}$ 96 400 μ m. Scale bars 200 μ m.

Gri3D[®] accelerates classical analyses

Soft hydrogel microwells can be **cryo-sectioned**, allowing arrays of organoids to be cut on the same plane. Moreover, **sample collection** (e.g. RNA, protein, media) is done directly on the microwell arrays, avoiding tedious handling steps and decreasing assay time.

Gri3D[®] product configurations

