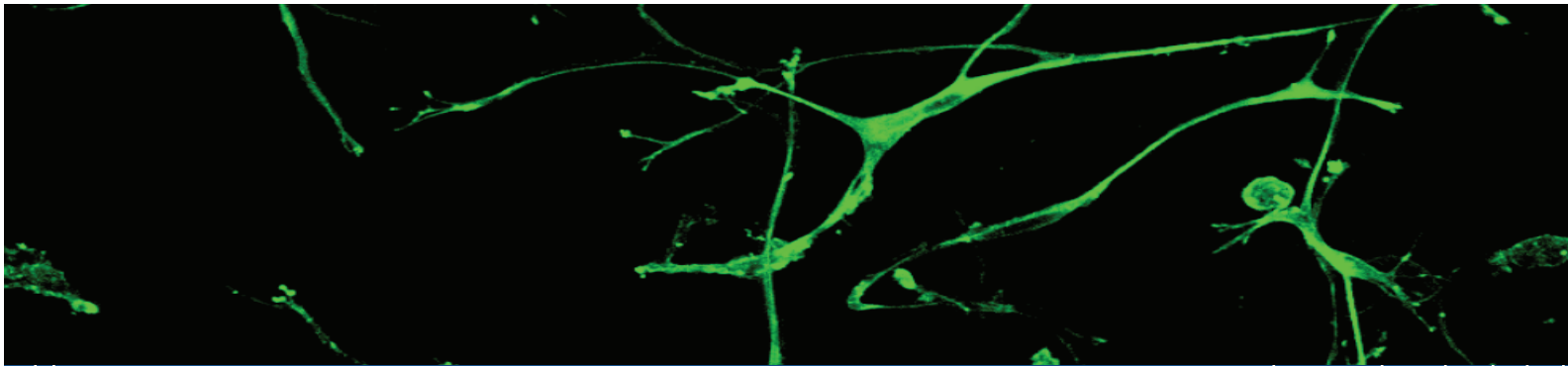




ECTICA TECHNOLOGIES

"Advancing hydrogel-based cell culture assays"



## 3DPROSEED™ WELL PLATE

The ready-to-use pre-casted hydrogels  
for 3D cell-based assays

# 3DPROSEED™ PLATE

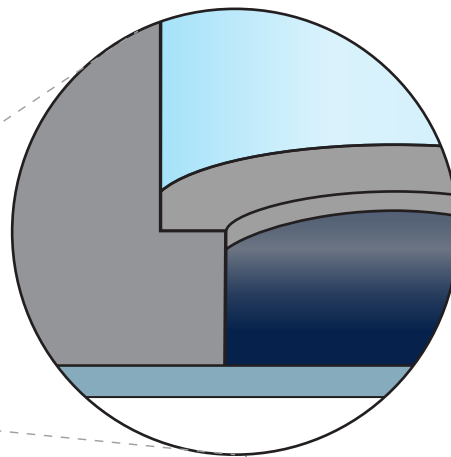
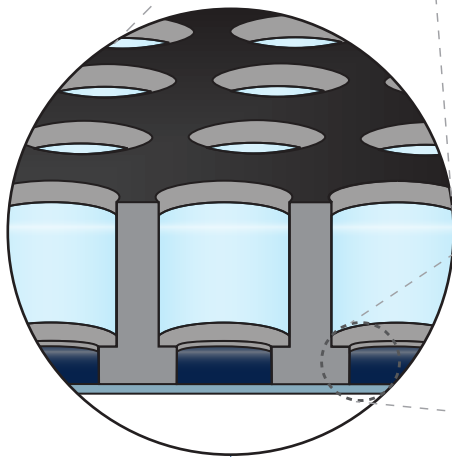
Pre-assembled synthetic hydrogels in a microtiter plate for ready-to-use and automation-compatible cell-based assays in 3D.

The 3DProSeed™ hydrogel surface enhances the penetration of cells. Simply seed cells on the hydrogel to establish a 3D culture.



Standard 96-well plate format for highest level of automation compatibility and imaging quality.

- ANSI plate footprint
- Black plate
- 180 micron glass bottom



crosslinking density

low

high

Ready-to-use and easy-to-use solution:

- Pre-assembled hydrogels at the bottom of each well
- Delivered hydrated in storage buffer
- Special inner-well geometry for facilitated pipetting

Patented hydrogel in-depth crosslinking density gradient: the hydrogel gradually disappears in the proximity of the upper surface

- Enhances penetration of cells seeded
- Enables repeated seedings



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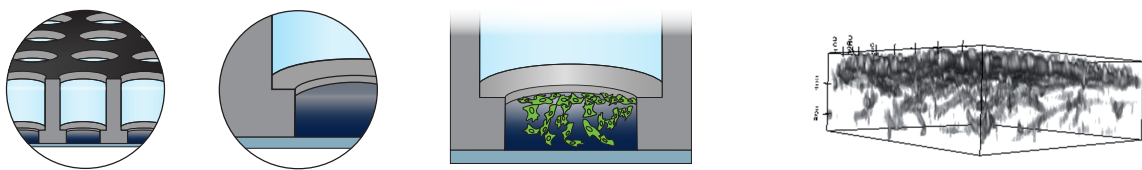
# PRODUCT AND TECHNOLOGY

## TRULY READY-TO-USE HYDROGELS

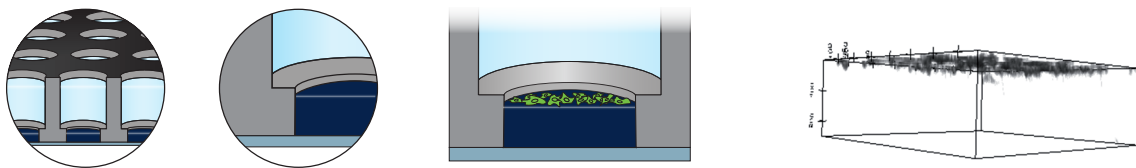
The 3DProSeed hydrogel is the **only hydrogel platform ready for cell seeding**. The unique hydrogel surface features an **in-depth cross-linking gradient**. The hydrogel gradually becomes softer towards the surface until it disappears, enabling seeded cells to migrate in depth and establish a 3D culture.

Without this gradient, cells recognize the hydrogel surface as a planar substrate and grow on it without invading the gel bulk. For this reason, alternative solutions do not offer the possibility to decouple the assembly of the gel and the cell seeding, requiring the users to encapsulate the cells in a self-made hydrogel.

### 3DPROSEED™ surface

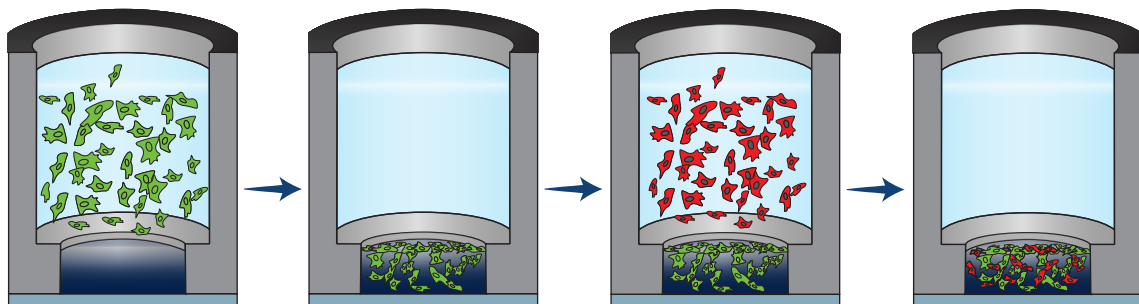


### Other hydrogel surfaces



## SEQUENTIAL SEEDING

The 3DProSeed surface enables the user to seed different cell populations at different time points. Often, to establish a tissue-specific microenvironment, it is necessary to pre-culture a supporting cell type in the hydrogel, before adding a second cell population. 3DProSeed can be easily used to establish co-culture systems, enabling more relevant *in vitro* assays.

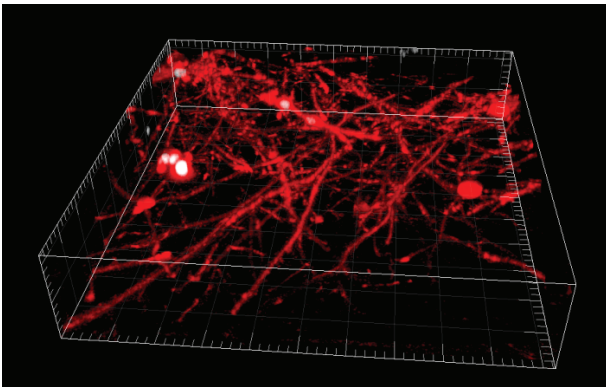
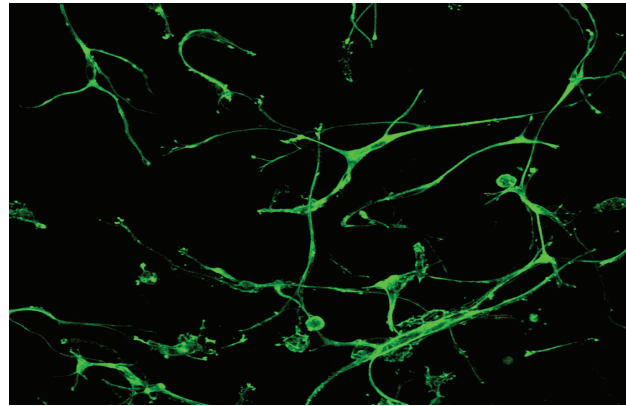


# EXAMPLES OF APPLICATIONS

## MESENCHYMAL CELL CULTURES

Immediately after the seeding on the 3DProSeed hydrogels, human MSCs adopt a typical 3D phenotype characterized by a spindle-like shape. Overtime, MSCs gradually invade the gels, reaching 200  $\mu\text{m}$  in depth within 3 days and more than 500  $\mu\text{m}$  after 10 days of culture. Upon invasion, MSCs remain pluripotent and can be differentiated toward adipogenic and osteogenic lineages.

A wide variety of mesenchymal cells, including fibroblasts, astrocytes and hepatic stellate cells, can be cultured in 3DProSeed.

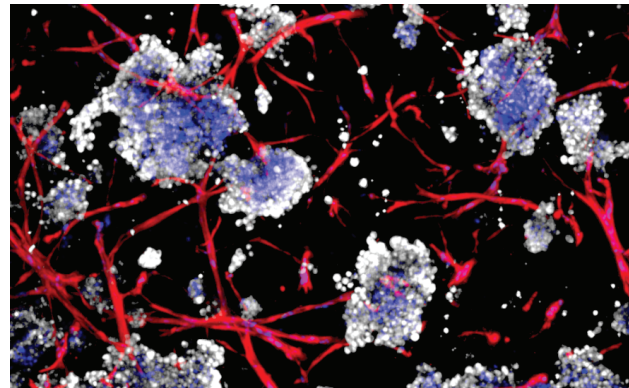


## NEURONAL CULTURES

Once seeded on 3DProSeed gels, human induced pluripotent stem cell (iPSC)-derived neurons extend their neurites throughout the hydrogel and establish a functional network with spontaneous activity (data obtained by calcium imaging). Neurites outgrowth is an accepted readout for neurotoxicology assays and it is routinely performed in 2D cultures. These assays could be simply transferred to 3D using our hydrogel platform. 3DProSeed also allows co-cultures, i.e. astrocytes can be pre-seeded on the gels with the sequential addition of neurons.

## FIBROBLAST-CARCINOMA CO-CULTURES

Cancer-associated fibroblasts play a role in modulating cancer invasion. Researchers have shown that fibroblasts can help cancer motility by creating tracks which lead cancer cells within hydrogels. Fibroblasts can be pre-seeded and cultured on 3DProSeed prior to the addition of pancreatic carcinoma cells. Over time, cancer cells associate with fibroblasts and acquire the ability to migrate in depth. Within the gel, cancer cells eventually start to form spheroid-like structures.



Are you interested in these applications  
or want to explore new ones?  
Contact us!

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