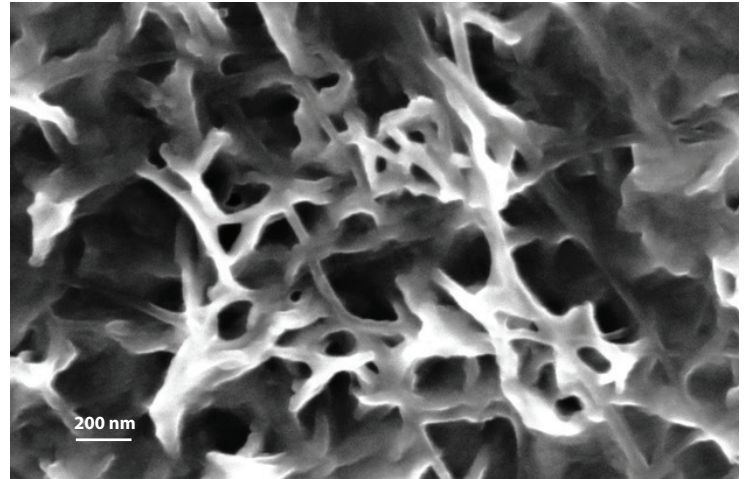


VitroGel 3D-RGD is a ready-to-use tunable hydrogel system for 3D cell culture and beyond

An animal origin-free polysaccharide hydrogel closely mimicking the natural extracellular matrix (ECM) environment, brings many advantages to bridge *in vitro* and *in vivo* studies.

VitroGel 3D-RGD is modified with RGD peptide for better cell adhesion.

- Perform procedure at room temperature with a simple mixing step.
- Pure synthetic. Better batch to batch consistency.
- Adjustable hydrogel strength



SEM image of VitroGel 3D-RGD hydrogel



3D cell culture process can be done in 20 min
(includes a 10-15 min waiting time for hydrogel stabilization)



Ready-to-use

Single vial system. Just mix with your cells and you are DONE!



Without undesired proteins

VitroGel 3D is an animal origin-free polysaccharide hydrogel system.



Room temperature stable

The hydrogel system is room temperature stable with neutral pH. Get rid of your ice bucket!



Transparent

The hydrogel system is transparent and compatible to different imaging systems for cell observation.



Easy Cell harvesting

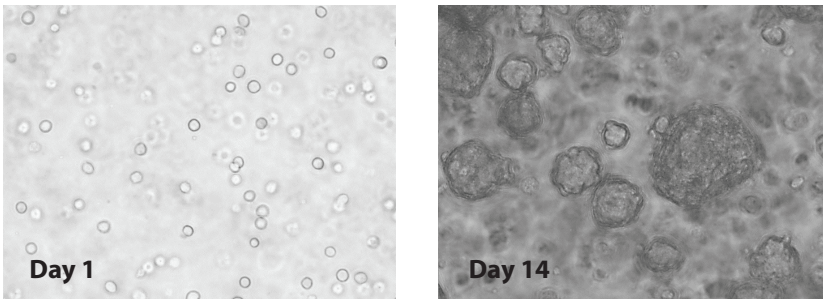
After 3D cell culture, cells can be easily harvested from the hydrogel by using standard centrifuge methods.



Injectable

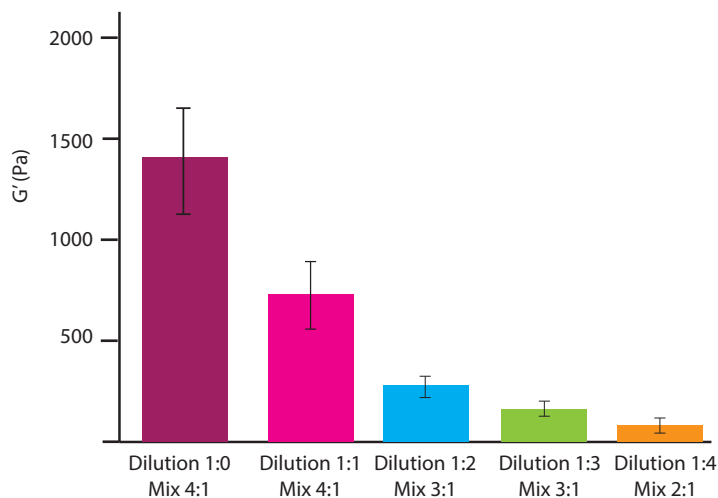
Using the right mixing ration, the hydrogel becomes injectable. Bridge into *in vivo* studies.

Example of 3D cell culture: Ins-1 Cells



Ins-1 cells were 3D cultured on VitroGel 3D-RGD system at high density (about 2×10^6 cells/mL) with RPMI 1640 medium. The dilution 1:3 (v/v), mixing ratio 1:1 (v/v).

Hydrogel Strength at Different Dilution and Mixing Ratios



Hydrogel strength of VitroGel 3D-RGD with DMEM medium at different dilutions and mixing ratios (The dilution or mixing ratio is v/v ratio). Different mixing ratios of diluted hydrogel solution and cell culture medium affect the speed of hydrogel formation and the final gel strength. At the same dilution of hydrogel solution, hydrogel formation is faster when mixed with higher volume of cell culture medium (The hydrogel forming speed: 2:1 > 3:1 > 4:1 of mixing ratio).

Comparison Benefits Chart

| | VitroGel | Basement membrane matrix | Polymer matrix | Hanging Drop Plate |
|------------------------------|----------|--------------------------|----------------|--------------------|
| Ready-to-use | ✓ | ✗ | ✓ | ✓ |
| Mimic Natural ECM | ✓ | ✓ | ✗ | ✗ |
| No undesired growth factors | ✓ | ✗ | ✓ | ✓ |
| Room temperature operation | ✓ | ✗ | ✓ | ✓ |
| Neutral pH | ✓ | ✗ | N/A | N/A |
| Cell harvesting | ✓ | ✗ | ✗ | ✓ |
| Transparent | ✓ | ✓ | ✗ | ✓ |
| Modifiable for cell adhesion | ✓ | ✓ | ✓ | ✗ |
| Control hydrogel stiffness | ✓ | ✓ | ✗ | ✗ |
| Injectable | ✓ | ✓ | ✗ | ✗ |

Product Information

TWG002 VitroGel 3D-RGD (10 mL)