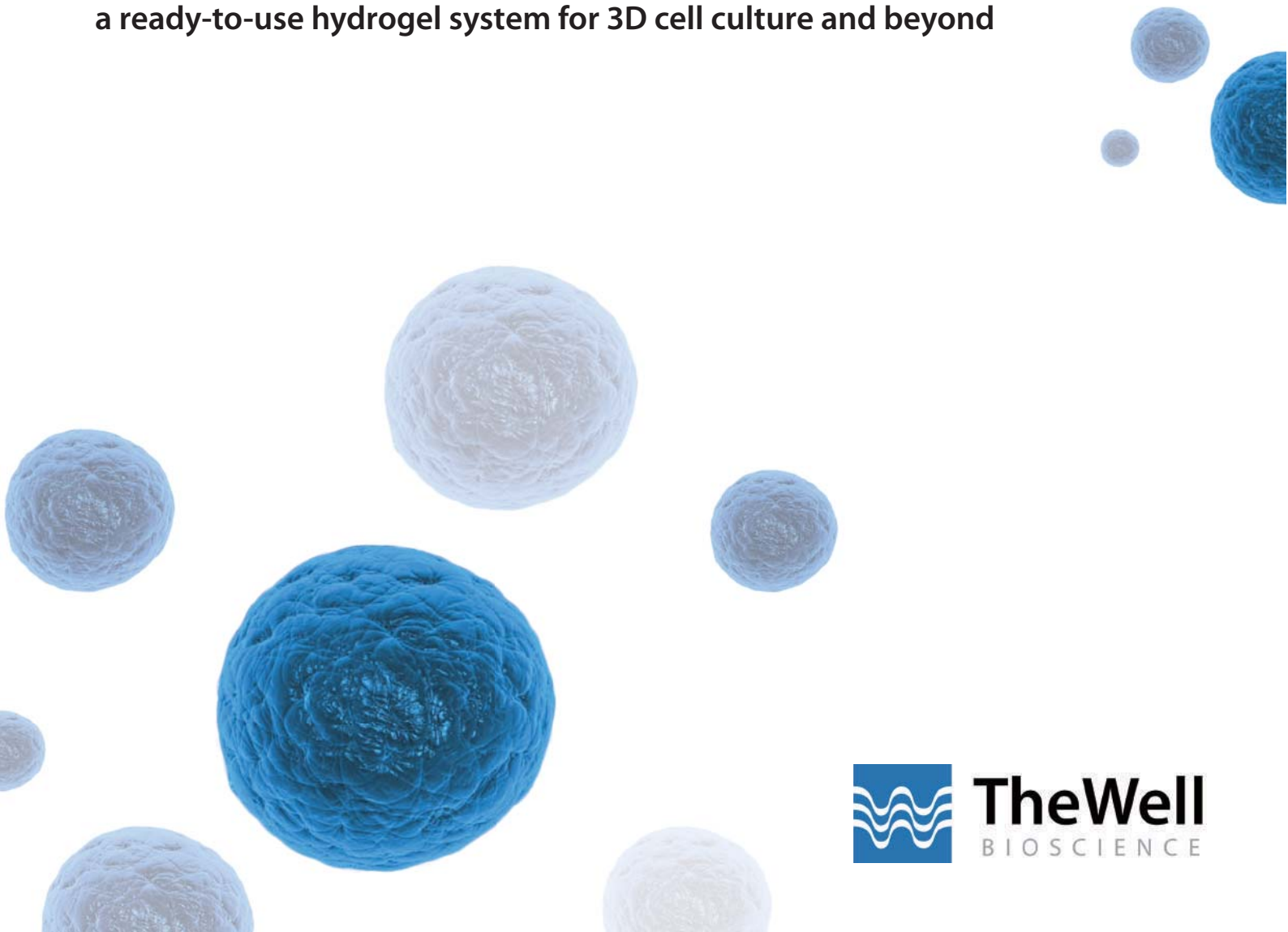


Empower 3D cell culture with
simplicity and versatility

VitroGel™ 3D

a ready-to-use hydrogel system for 3D cell culture and beyond



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

Closely mimicking the natural extracellular matrix (ECM) environment, this distinct system brings many advantages to bridge *in vitro* and *in vivo* studies through 3D cell culture and beyond:

- Perform procedure at room temperature with a simple mixing step.
- Compatible with imaging and downstream analysis.
- Injectable for *in vivo* studies.



Ready-to-use

The hydrogel system is room temperature stable with neutral pH. Just mix with your cells and you are DONE!



Fast gelation

Gelation starts immediately right after mixing and becomes stable in 15 minutes. Cells distribute homogeneously in the hydrogel.



Transparent

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



Permeable

Oxygen, nutrition and other molecules can easily move in/out the hydrogel system. Great for drug discovery studies!



Cell harvesting

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

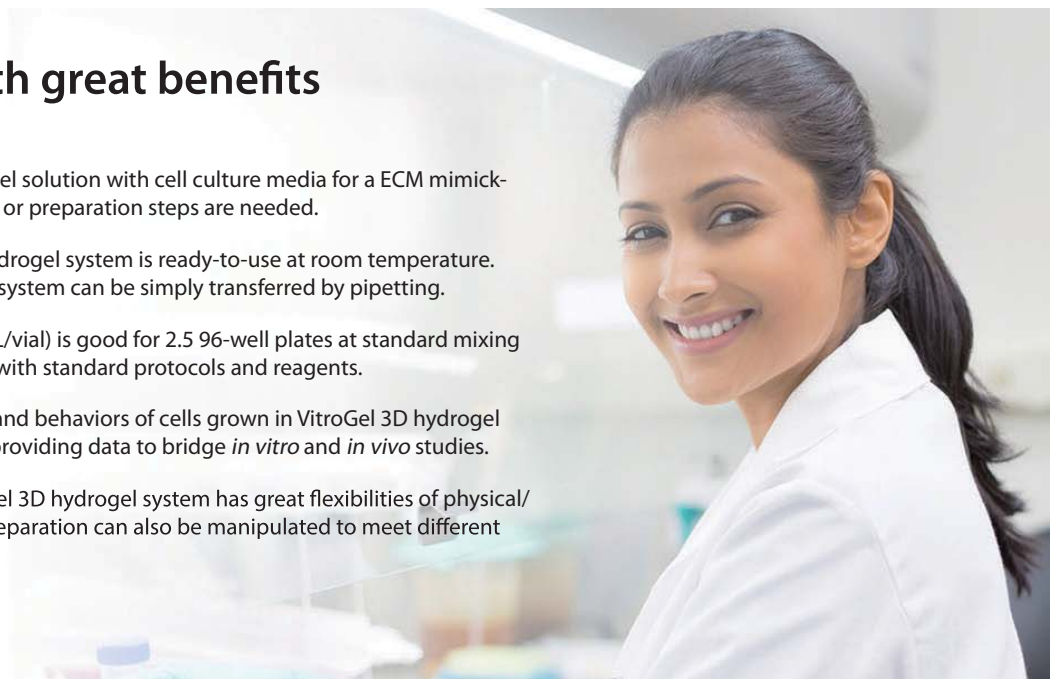


Injectable

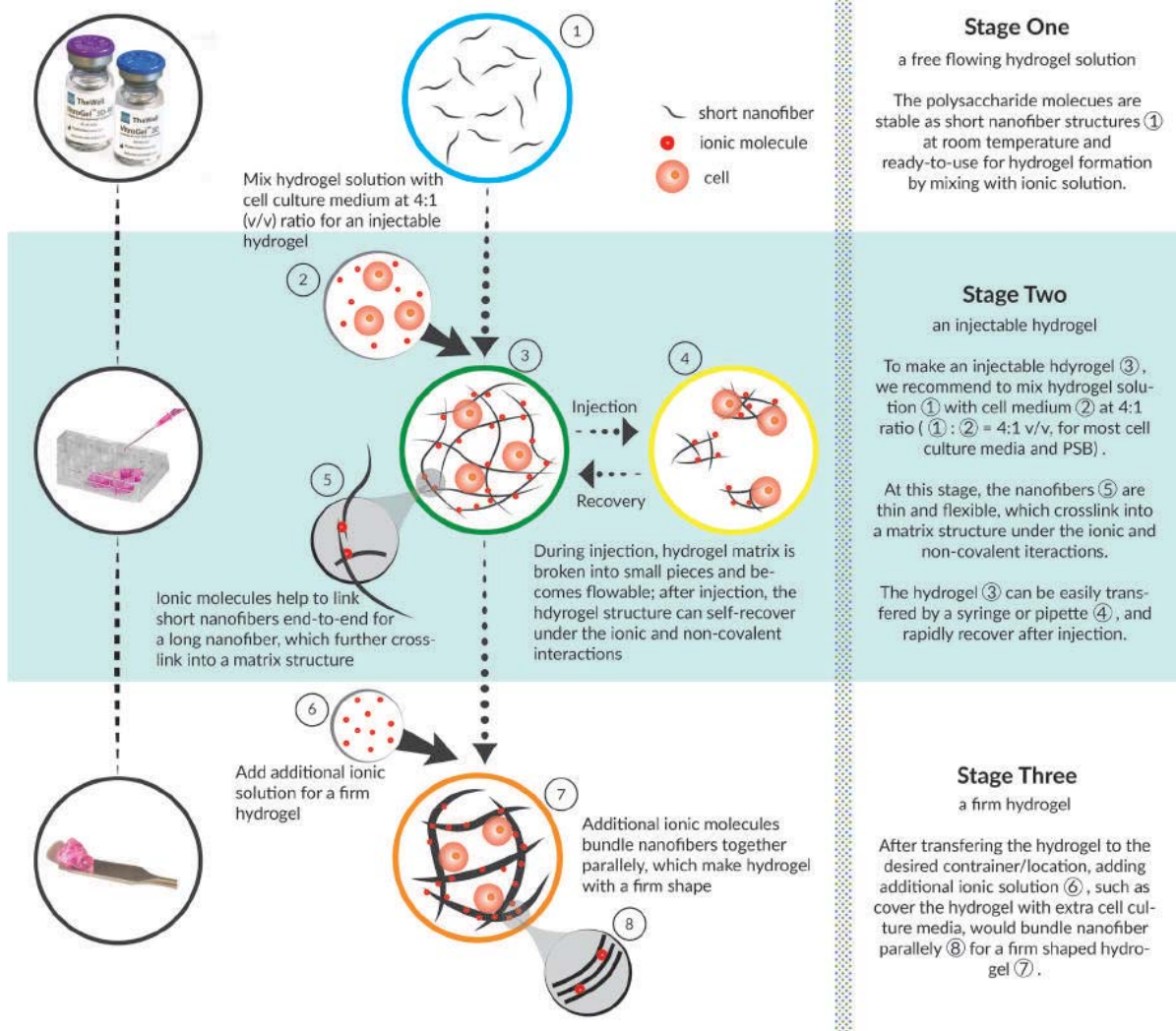
Using the right mixing ratio, the hydrogel becomes injectable. Great for *in vivo* studies!

Enjoy VitroGel 3D with great benefits

- **Save time:** Simply mixing the hydrogel solution with cell culture media for a ECM mimicking environment. No additional reagents or preparation steps are needed.
- **Easy operation:** The VitroGel 3D hydrogel system is ready-to-use at room temperature. After mixing for hydrogel formation, the system can be simply transferred by pipetting.
- **Cost saving:** Each VitroGel 3D (10 mL/vial) is good for 2.5 96-well plates at standard mixing ratio. Downstream analysis can be done with standard protocols and reagents.
- **More accurate:** The morphologies and behaviors of cells grown in VitroGel 3D hydrogel system are similar to their natural state, providing data to bridge *in vitro* and *in vivo* studies.
- **Multiple applications:** The VitroGel 3D hydrogel system has great flexibilities of physical/chemical properties and the hydrogel preparation can also be manipulated to meet different applications.



How does it work?



VitroGel 3D vs other 3D cell culture methods

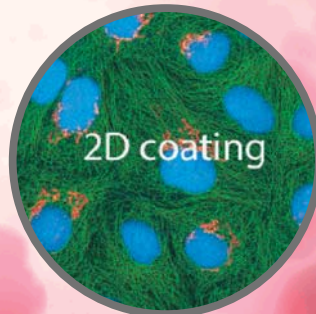
	VitroGel 3D	Basement membrane matrix	Polymer matrix	Hanging drop plate	Low adhesion plate	Micro-patterned plate	Magnetic Levitation
Ready-to-use	✓		✓	✓	✓	✓	✓
Mimic Natural ECM	✓	✓					
No undesired growth factors	✓		✓	✓	✓	✓	✓
Room temperature operation	✓		✓	✓	✓	✓	✓
Neutral pH	✓		N/A	N/A	N/A	N/A	N/A
Cell harvesting	✓			✓	✓	✓	✓
Transparent	✓	✓		✓	✓	✓	✓
Modifiable for cell adhesion	✓	✓	✓		✓	✓	
Control hydrogel stiffness	✓	✓					
Injectable	✓	✓					

Multiple applications of VitroGel™ 3D



3D cell culture

Bridge the *in vitro* and *in vivo* studies by creating natural cellular environment



2D coating

Control the stiffness of substance cell attached, study cell invasion, migration and more



and more.....

Injectable hydrogel property for *in vivo* studies, cell harvesting after 3D cell culture and other applications

Case Study

VitroGel 3D has been successfully used on different projects with many cell lines such as human and mouse pancreatic beta cells, insulin secreting beta cell derived lines, lymphocytes, Hela cells, human embryonic kidney 293 cells, human colon carcinoma cell lines (HCT-8), breast cancer cells and much more. The results show that cells can suspend homogeneously in the hydrogel and successfully grow in the 3D structure. Cell culture media can easily penetrate the hydrogel matrix and provide nutrition for long-term cell culture. The growth of cells can be observed easily under microscopy.

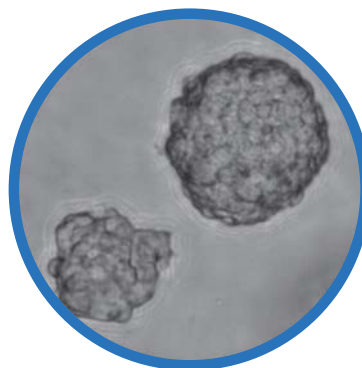
Case 1: Beta TC3 cells

Application: 3D cell culture
Product: VitroGel 3D-RGD
Seeding number: 5×10^5 cells/mL
Time: 14 days



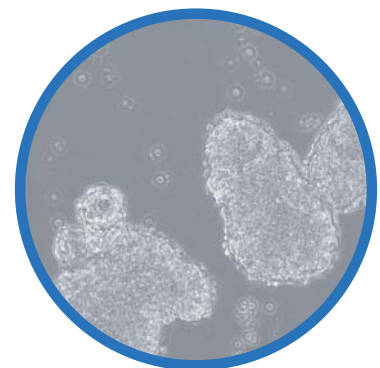
Case 2: Ins-1 cells



Application: 3D cell culture
Product: VitroGel 3D-RGD
Seeding number: 5×10^5 cells/mL
Time: 14 days



Case 3: EndoC β H1 cells

Application: 2D coating
Product: VitroGel 3D
Seeding number: 2.5×10^5 cells/mL
Time: 5 days



	VitroGel™ 3D	VitroGel™ 3D-RGD
Catalog number	TWG001	TWG002
Description	unmodified hydrogel for maximum manipulation	GRGDS modified hydrogel to promote cell attachment
Content	10 mL/vial	10 mL/vial
Numbers of uses	Approximately 2.5 of 96-well plate at 50 µL/well	Approximately 2.5 of 96-well plate at 50 µL/well
Storage conditions	Stable for 18 months if stored at 4-8°C, and for 6 months if stored at 15-25°C. DO NOT FREEZE. Keep away from strong acids, strong bases and strong oxidizers.	
Product images		

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