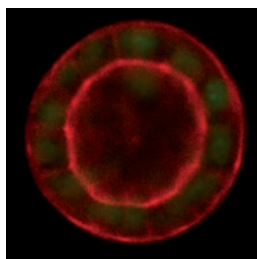
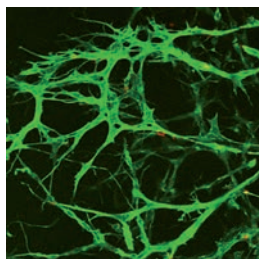


3-D cell culture in modified PVA-Hydrogels



Renal epithelial cells (MDCK) cultured in 3-D Life PVA-Hydrogel modified with the adhesion peptide RGD form single layered epithelial cysts. (actin cytoskeleton red, nuclei green).



NIH 3T3 fibroblasts spread and migrate in a 3-D Life PVA-Hydrogel modified with the RGD-Peptide and the cell-degradable crosslinker CD-Link (actin cytoskeleton green, nuclei red).

3-D Life Hydrogels: The toolbox for innovative 3-D Cell Environment Design

- Standard Products for Research
- Bulk delivery of reagents
- Customized reagents
- Collaborations with academic and industrial partners to explore and develop the use of the 3-D Life technology in complex cell-based assays and tissue models for drug screening and in biomedical engineering.

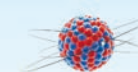
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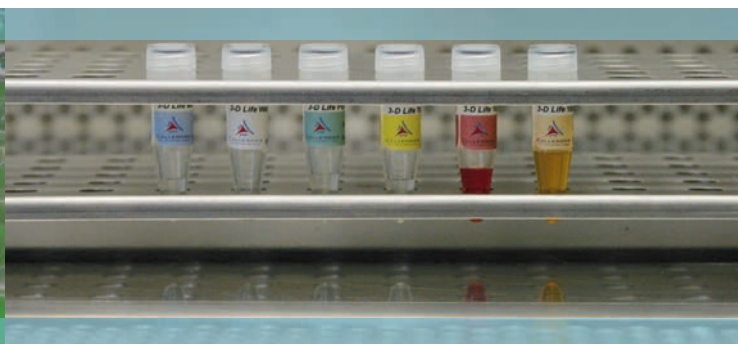
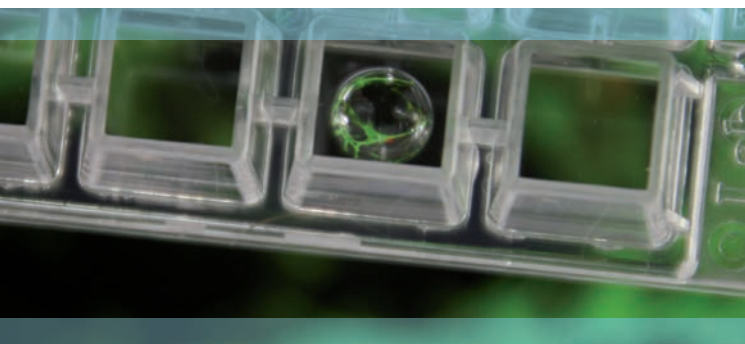


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3-D Life

Cell Environment Design at Your Fingertips

Biomimetic Hydrogels For 3-D Cell Culture



A shift in Paradigm

Research of the past years has shown that cells cultured *in vitro* in three dimensions (3-D) resemble the physiology of their counterparts *in vivo* much better than cells cultured conventionally on flat surfaces of tissue culture plates. This is reflected in differential gene expression and a difference in cell behavior and differentiation. As a consequence, 3-D cell culture is often the better choice for investigating cell function in research and development.

The 3-D Life Technology: A Modular System

The 3-D Life system is a set of reagents for the individual design of hydrogels for 3-D cell culture. Due to the inert nature of the basic materials and a high capacity for modification with bioactive factors fully controlled by the user, these gels achieve a high performance that suits many applications in basic research, drug development and regenerative medicine.

User-Controlled Biomimetic Design of Hydrogels for 3-D Cell Culture

- Covalent modification with bioactive molecules (e.g. peptides)
- Wide range of ligand density (up to 5 mmol/l)
- Cell-degradable linker for cell spreading and migration
- User-degradable gel for cell rescue after 3-D cell cultivation
- Defined composition for standardized experiments
- Tunable gel stiffness

Cell culture, cell labeling and microscopy

- Fully transparent gels
- Cultivation of cells in and on gels
- Live cell observation or *in situ* fixation
- Cell labeling with small molecules (e.g. fluorescently labeled reagents for actin staining, live-dead observation or cell proliferation)
- Ideal for genetically encoded reporters (e.g. GFP)

Easy Handling

- No specific equipment required
- No cell-harming treatments
- Rapid reaction prevents cell settlement before gel is formed
- Amenable to automation for multi-well plate dispensing
- Injectable cell delivery and *in situ* gel formation

