

The 3-D Life Technology: A Modular System

The 3-D Life system is a technology for the individual design of hydrogels for 3-D cell culture. The inert nature of the basic materials and the high capacity for modification with bioactive molecules allow full control of biomimetic design by the user. This versatility in composition suits many applications in basic research, drug development and regenerative medicine.

User-Controlled Biomimetic Hydrogel Design

- Covalent modification with bioactive molecules (e.g. peptides)
- Wide range of ligand density (up to 5 mmol/l)
- Tunable stiffness (up to 10 kPa)
- Cell-degradable crosslinker for cell spreading and migration
- User-degradable gel for cell recovery after 3-D cell cultivation

Tunable gel stiffness, independent of ligand density!

Cell Culture, Cell Labeling and Microscopy

- Fully transparent gels
- Cultivation of cells in and on top of gels
- Live cell observation or *in situ* fixation
- Cell labeling with small molecules (e.g. phalloidin, Calcein AM/PI, Hoechst) or antibodies
- Ideal for genetically encoded reporters (e.g. GFP)

Advantages over Basement Membrane Extracts

- Free of animal components
- No batch-to-batch variation
- No temperature dependence
- Open hydrogel design
- Highly tunable hydrogel stiffness
- Full control over biomimetic modification

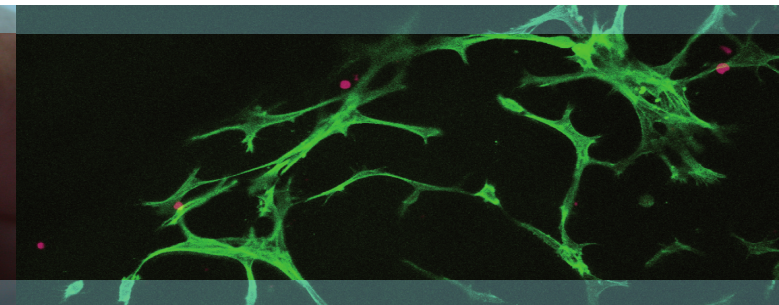
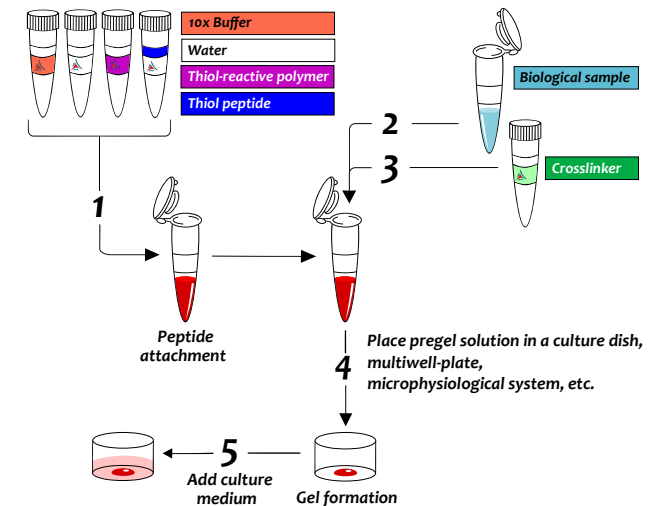
3-D Life Hydrogels for 3Rs

- Reducing use of animals in research!

Easy Handling

- No specific equipment required
- No cell-harming treatments
- Choice of fast or slow gelling gels
- Amenable to automation
- Injectable (in vivo experiments)

Steps to Prepare Slow Gelling Hydrogels



Not for therapeutic use.
For research only.