

Product name **3-D Life PVA-CD Hydrogel SG Kit**

Description The *3-D Life* PVA-CD Hydrogel SG Kit provides reagents for setting up hydrogels for 3-D cell culture or related applications. Its major components are SG-PVA and the crosslinker CD-Link. When the two reagents are combined, thiol groups on CD-Link form stable thioether bonds with SH-reactive groups on SG-PVA. The resulting polymer network forms a hydrogel. The crosslinking step can be performed in the presence of cells to embed cells in the hydrogel.

Prior to the crosslinking step, cell adhesion peptides (e.g. *3-D Life* RGD Peptide, Cat. No. 09-P-001) can be covalently attached to a portion of the SH-reactive groups on SG-PVA to provide a cell-adhesive matrix.

The formation of hydrogels is performed at physiological pH for optimal cell compatibility. Gelation starts several minutes after mixing the components at room temperature (compare table in General Protocol GP 2), providing enough time to conveniently manipulate the solution before the onset of gel formation.

A matrix metalloprotease (MMP)-cleavable peptide in CD-Link with a broad range for MMP cleavage including MMP1, MMP3, MMP7 and MMP9^{*} allows cells to locally degrade the polymer network, if they produce the indicated MMPs. This allows cells to spread and migrate within the hydrogel. In most cases cell spreading and migration also requires the presence of adhesion peptides.





[Before using this product please consult the General Protocol GP 2 on www.cellendes.com for setting up SG Hydrogels.](http://www.cellendes.com)

Catalog number G83-1

Quantity Allows formation of up to 2 ml *3-D Life* Hydrogel depending on the grade of stiffness of the gel.

Applications 3-D cell culture, hydrogel injections, filling of microchannels, generation of soft to very stiff gels.

Components

| | Materials provided ¹ | Quantity | Concentration of reactive groups | Storage Temperature |
|---|---------------------------------|--------------------------|----------------------------------|---|
|  | SG-PVA | 170 μ l | 30 mMol/L | Short term (\leq 2 months): 4°C Long term: -80°C |
|  | CD-Link, lyophilized | 200 μ l ³ | 20 mMol/L | -20°C or -80°C (lyophilisate and solution) |
|  | 10 x CB (pH 7.2) | 200 μ l | n.a. | Short term (\leq 2 months): 4°C Long term: -20°C or -80°C |
|  | Water | 2 x 1500 μ l | n.a. | RT to -80°C |

¹ All materials are filter-sterilized.

² Volume after reconstitution of lyophilisate.

Reconstitution of lyophilisates

CD-Link:

- Bring lyophilisate to room temperature.
- Briefly centrifuge vial to make sure that the entire material is at the bottom of the centrifuge tube.
- Add 188 μ l water for a concentration of 20 mMol/L thiol groups. This will result in a 200 μ l CD-Link solution.
- Close centrifuge tube and vortex briefly.
- Wait 5 min or until all material is dissolved.
- Briefly vortex and centrifuge again.

NOTE INTENDED FOR RESEARCH USE ONLY. NOT FOR USE IN HUMAN THERAPEUTIC OR DIAGNOSTIC APPLICATIONS.

* Knight, C. G. et al. FEBS 296:263-66 (1992)