Product Information

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Superfibronectin

Catalog Number **S5171**
Storage Temperature 2–8 °C

Product Description
Fibronectins are made of two subunits held by disulfide bonds at the C terminal. In the extracellular matrix fibrils, fibronectins are further disulfide bonded into high molecular mass polymers. Fibronectin subunits vary in size between 235 and 270 kDa depending on tissue and species. Each subunit is made of repeating modules of three types: I, II, and III. There are 12 type I repeats, ~45 amino acids long, clustered in three groups, two adjacent type II repeats each 60 amino acids long, and 15-17 type III repeats each ~90 amino acids long. Type I and type II each contain two disulfide bonds, while type III lack disulfides bonds. There are two free SH groups per subunit at the type III repeat.[1,2]

Fibronectin disulfide-bonded multimers are deposited in the fibrillar, pericellular matrix. Several regions in the fibronectin molecule are involved in the matrix assembly including the amino terminal 29 kDa heparin binding region and the RGD containing cell-binding domain of fibronectin. Recently a new region, type III_1 repeat cloned from human placenta cDNA, was reported to participate in matrix formation. This recombinant fibronectin III_1-C modeled after the C-terminal two thirds of the III_1 repeat, was reported to bind to fibronectin and to induce spontaneous disulfide crosslinking of the fibronectin molecules into multimers which resemble matrix fibrils.

This new form of fibronectin, called superfibronectin, dramatically enhances the adhesive properties of fibronectin and suppresses cell migration. For example, the extent of cell spreading at 0.5 μg/ml fibronectin with the fragment is comparable to that of 10 μg/ml fibronectin alone. These results were obtained with CHO cells, IMR-90 fibroblasts, T47D breast carcinoma cells, and UCLA-P_3 lung carcinoma cells. Superfibronectin may be closely related to the *in vivo* matrix form of fibronectin and may more accurately approximate the interaction of cells with the fibronectin matrix *in vivo*.

This Superfibronectin product is formulated with recombinant, human fibronectin fragment III_1-C expressed in *E. coli* and fibronectin from human plasma. The extent of cell attachment and spreading using CHO and BHK cells has been confirmed for this product.

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Superfibronectin is supplied as a 2 mg protein/ml solution in 0.05 M Tris buffered saline. To coat a 96 well plate, it is recommended to dilute the product with sterile PBS to a concentration of 5 μg/ml and add 100 μl/well. Incubate for 2 hours at 37 °C and wash two times with 100 μl of PBS.

Optimal concentration for specific cell types and applications should be determined by the end-user.

Storage/Stability
Store the Superfibronectin product at 2–8 °C. **Do not freeze**. Dilute immediately prior to use.

References
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