



SUPERFIBRONECTIN

Product No. S 5171

Store at 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 weight polymers. Fibronectin subunits vary in size between approx. 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 approximately 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 about 90 amino acid 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 III₁ repeat cloned from human placenta cDNA, was reported to participate in matrix formation (3). This recombinant fibronectin III₁-C modeled after the C-terminal two thirds of the III₁ 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, that is 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-P₃ lung carcinoma cells. We have substantiated these results in CHO and BHK cells. Superfibronectin may be closely related to the *in vivo* matrix form of fibronectin

Product Information

and may more accurately approximate the interaction of cells with the fibronectin matrix *in vivo*. We have formulated the recombinant human fibronectin fragment III₁-C with human plasma fibronectin to make the Superfibronectin product.

REAGENT

For laboratory use only.

Not for drug, household or other uses.

Product Use

Superfibronectin is supplied at 2 mg protein/ml and can be diluted with sterile PBS to a concentration of 5 µg/ml prior to use. To coat a 96 well plate, add 100 µl/well and incubate for 2 hours at 37°C. Wash 2x with 100 µl PBS.

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

Product Storage

Superfibronectin should be stored at 2-8°C. **Do not freeze.** Dilute immediately prior to use.

References

1. R.O. Hynes page 56 in "Guidebook to the Extracellular Matrix and Adhesion Proteins" Kreis T. and Vale R. eds. (1993) Oxford University Press.
2. R.O. Hynes, "Fibronectins" (1990) Springer-Verlag New York.
3. M.A. Chemousov, F.J. Fogerty, V.E. Koteliansky and D.F. Mosher (1991). J. Biol. Chem., 266:10851.
4. Moria and E. Rouslahti (1992) J. Biol. Chem., 118:421.
- A. Moria, Z. Zhang and E. Rouslahti (1994) Nature, 367:193.

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