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Fibronectin

From human plasma
Lyophilizate, before lyophilization filtered through a 0.2 μm pore size membrane.

Cat. No. 10 838 039 001 5 mg

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Store at +2 to +8°C

Product overview

Formulation
Lyophilized (contains glycine and sodium chloride); before lyophilization filtered through a 0.2 μm pore size membrane.

Preparation
Human fibronectin is purified from human plasma (1).
The raw material used for the production is negative as tested for Anti-HIV antibodies and HBs-antigen.

Primary structure
Human plasma fibronectin consists of two similar polypeptide chains (α-, β-chain, each of 220 kDa), connected by two disulfide bridges (2–4).

Properties

Molecular weight	440,000 Da
Purity	> 95% pure as determined by HPLC, additionally checked on SDS-PAGE.
Species specificity	effective on most mammalian cells.
Biological activity	Tested for the promotion of adherence and growth of human umbilical vein enclothelial cells.

Description
Fibronectin is a large dimeric glycoprotein. Fibronectin is widely distributed in a soluble form (plasma fibronectin) in plasma and other body fluids. Many cell types synthesize and secrete fibronectin, but most circulating fibronectin is produced by hepatocytes.
Fibronectin is also widely distributed in an insoluble form in tissues (cellular fibronectin), where it is covalently cross-linked into multimeric fibers (2).
Plasma fibronectin is not identical to that in extracellular matrices and on cell surfaces (cellular fibronectin), but is equally active in cell attachment.
Fibronectin has several adhesive functions, *e.g.*, cell-to-cell attachment, cell adherence to plastic or basement membranes and clot stabilization
Each polypeptide chain of fibronectin can be divided into functional domains (*e.g.*, cell binding domain, collagen binding domain, heparin binding domain) (2–4).

Application
Fibronectin promotes the attachment and subsequent spreading of many cells. The cell adhesion region (cell binding domain) interacts with mammalian cells and promotes their binding to and spreading on plastic.
Fibronectin also binds to other extracellular and basement membrane components and mediates cell attachment to collagen (5–10).

Reconstitution
Add 5 ml sterile water to yield a final concentration of 1 mg/ml. Incubate for 30 – 60 min at +37°C to dissolve.
Do not agitate!
Upon reconstitution, the solution may contain a small amount of insoluble aggregated material. Occurence of these aggregates is a phenomenon inherent to fibronectin (1) and does not influence product performance.

Working concentration
For the coating of cell culture vessels 5 μg/cm² is used.

Storage/Stability
The lyophilizate is stable at +2 to +8°C, the reconstituted solution is stable at −15 to −25°C.
Note: It is recommended to store the reconstituted solution in aliquots; at −15 to −25°C. Repeated freezing and thawing should be avoided.

Regulatory Disclaimer
For life science research only. Not for use in diagnostic procedures.

Coating cell culture vessels with fibronectin

Protocol
Please refer to the following table.

Step	Action
1	Dissolve the lyophilizate with sterile tissue grade water to a final concentration of 1 mg/ml as described above (reconstitution).
2	Dilute an appropriate aliquot with sterile PBS or basal medium to a final concentration of 50 μg/ml.
3	Pipette 100 μl of this solution (50 μg/ml) per 1 cm² surface area to be coated (5 μg/cm²). ***Note***: This can be increased or decreased to fit the application. However, the solution should completely wet the surface.
4	Incubate for about 45 min at +15 to +25°C.
5	Remove the solution carefully from the edges without touching the surface area with the pipette.
6	It is possible, but not necessary, to wash the coated surface with medium or buffer. ***Note***: The plates should not be allowed to dry! The vessels should be used immediately.

References

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Changes to Previous Version
Editorial changes.

Trademarks

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