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Not for use in diagnostic procedures.

Fibronectin (pure)
from human plasma

Version: 19
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Cat. No. 11 051 407 001	1 mg
Cat. No. 11 080 938 001	5 mg

Store lyophilizate at +2 to +8°C.

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1. General Information

1.1. Contents

Vial / Bottle	Label	Function / Description	Catalog Number	Content
1	Fibronectin (pure)	▪ Lyophilized, contains glycine and sodium chloride. ▪ Filtered through 0.2 µm pore size membrane prior to lyophilization.	11 051 407 001	1 bottle, 1 mg
			11 080 938 001	1 bottle, 5 mg

1.2. Storage and Stability

Storage Conditions (Product)

When stored at +2 to +8°C, the lyophilizate is stable through the expiration date printed on the label.

Vial / Bottle	Label	Storage
1	Fibronectin (pure)	Store at +2 to +8°C.

Storage Conditions (Working Solution)

Store reconstituted solution in aliquots at −15 to −25°C.

⚠ ***Avoid repeated freezing and thawing.***

Reconstitution

Reconstitute the lyophilizate in 1 or 5 ml high-quality, tissue-grade water, respectively (final concentration 1 mg/ml). Incubate 30 to 60 minutes at +37°C to dissolve.

⚠ ***Do not agitate solution.***

ⓘ *After reconstitution, the solution may contain a small amount of insoluble aggregated material. Occurrence of these aggregates is a phenomenon inherent to fibronectin and does not influence product performance.*

1.3. Additional Equipment and Reagent required

For reconstitution of lyophilizate

- High-quality, tissue-grade water

For preparation of working solution

- sterile-filtered PBS or basal medium

1.4. 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.

2. How to Use this Product

2.1. Before you Begin

General Considerations

Primary structure

Human plasma fibronectin consists of two similar polypeptide chains (α-, β-chain, each 220,000 Da), connected by two disulfide bridges.

Safety Information

The serum used for this preparation was tested for HBs antigen and for the presence of Anti-HIV antibodies.

Working Solution

See section, **Reconstitution** *for additional information.*
Dilute an appropriate aliquot of reconstituted Fibronectin (1 mg/ml) with sterile-filtered PBS or basal medium to a final concentration of 50 µg/ml.

2.2. Protocols

Coating cell culture vessels with fibronectin

For additional information, see section, **Working Solution**.

1. Pipette 100 µl of Fibronectin working solution (50 µg/ml) per 1 cm^2 surface area to be coated (5 µg/cm^2).
   This can be increased or decreased to fit the application. However, the solution should completely wet the surface.

2. Incubate for approximately 45 minutes at +15 to +25°C.

3. Remove the solution carefully from the edges without touching the surface area with the pipette.

4. It is possible, but not necessary, to wash the coated surface with medium or buffer.
   Do not allow the plates to dry. The vessels must be used immediately.

2.3. Parameters

Biological Activity

Tested for the promotion of adherence and growth of human umbilical vein endothelial cells.

Molecular Weight

440,000 Da

Purity

≥95% pure as determined by HPLC and verified on SDS-PAGE.

Specificity

Species specificity: Active on most mammalian cells.

Working Concentration

Use 5 µg/cm^2 for the coating of cell culture vessels.

3. Additional Information on this Product

3.1. Test Principle

Fibronectin is a large dimeric glycoprotein. It 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 crosslinked into multimeric fibers. 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:

- Cell-to-cell attachment
- Cell adherence to plastic or basement membranes
- Clot stabilization

Each polypeptide chain of fibronectin can be divided into functional domains, such as the cell-binding domain, collagen-binding domain, and the heparin-binding domain.

Preparation

Human fibronectin is purified from human plasma (Vuento M, Vaheri A, 1979).

3.2. References

- Vuento M, Vaheri A. Purification of fibronectin from human plasma by affinity chromatography under non-denaturing conditions. Biochem J. 1979;Nov 1;183(2):331-337.

4. Supplementary Information

4.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols	
Information Note: Additional information about the current topic or procedure.	
Important Note: Information critical to the success of the current procedure or use of the product.	
① ② ③ etc.	Stages in a process that usually occur in the order listed.
❶ ❷ ❸ etc.	Steps in a procedure that must be performed in the order listed.
* (Asterisk)	The Asterisk denotes a product available from Roche Diagnostics.

4.2. Changes to previous version

Layout changes.
Editorial changes.

4.3. Trademarks

All product names and trademarks are the property of their respective owners.

4.4. License Disclaimer

For patent license limitations for individual products please refer to:
List of biochemical reagent products.

4.5. Regulatory Disclaimer

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

4.6. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

4.7. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site**.

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

0421.11239902001 ®

Roche Diagnostics GmbH
Sandhofer Strasse 116
68305 Mannheim
Germany