Product datasheet

Mouse Fibronectin ELISA Kit ab210967
SimpleStep ELISA®

Overview

Product name: Mouse Fibronectin ELISA Kit
Detection method: Colorimetric

Precision

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>serum</td>
<td>5</td>
<td></td>
<td></td>
<td>2.3%</td>
</tr>
</tbody>
</table>

Intra-assay

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>serum</td>
<td>3</td>
<td></td>
<td></td>
<td>4.4%</td>
</tr>
</tbody>
</table>

Inter-assay

Sample type: Cell culture supernatant, Urine, Serum, Plasma
Assay type: Sandwich (quantitative)
Sensitivity: 251 pg/ml
Range: 0.63 ng/ml - 40 ng/ml

Recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>102</td>
<td>101% - 103%</td>
</tr>
<tr>
<td>Urine</td>
<td>107</td>
<td>104% - 113%</td>
</tr>
<tr>
<td>Serum</td>
<td>119</td>
<td>117% - 123%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>108</td>
<td>106% - 109%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>107</td>
<td>103% - 112%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>120</td>
<td>119% - 122%</td>
</tr>
</tbody>
</table>
### Assay time
1h 30m

### Assay duration
One step assay

### Species reactivity
**Reacts with:** Mouse  
**Does not react with:** Cow

### Product overview
Mouse Fibronectin ELISA Kit (ab210967) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Fibronectin protein in cell culture supernatant, plasma, serum, and urine. It uses our proprietary SimpleStep ELISA® technology. Quantitate Mouse Fibronectin with 251 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less  
- High sensitivity, specificity and reproducibility from superior antibodies  
- Fully validated in biological samples  
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate ([ab203359](ab203359)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

### Notes
Fibronectin is a large glycoprotein present in the extracellular matrix and circulating plasma. Fibronectin is important in many cell adhesion and migration related processes, including wound healing, embryogenesis, nerve regeneration and maintenance of cell shape.

### Platform
Pre-coated microplate (12 x 8 well strips)

### Properties

#### Storage instructions
Store at +4°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Mouse Fibronectin Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Mouse Fibronectin Detector Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Wash Buffer PT (<a href="ab206977">ab206977</a>)</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Antibody Diluent 4BR</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Mouse Fibronectin Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 unit</td>
</tr>
<tr>
<td>Sample Diluent NS (<a href="ab193972">ab193972</a>)</td>
<td>1 x 50ml</td>
</tr>
</tbody>
</table>
Function

Fibronectins bind cell surfaces and various compounds including collagen, fibrin, heparin, DNA, and actin. Fibronectins are involved in cell adhesion, cell motility, opsonization, wound healing, and maintenance of cell shape. Involved in osteoblast compaction through the fibronectin fibrillogenesis cell-mediated matrix assembly process, essential for osteoblast mineralization. Participates in the regulation of type I collagen deposition by osteoblasts. Anastellin binds fibronectin and induces fibril formation. This fibronectin polymer, named superfibronectin, exhibits enhanced adhesive properties. Both anastellin and superfibronectin inhibit tumor growth, angiogenesis and metastasis. Anastellin activates p38 MAPK and inhibits lysophospholipid signaling.

Tissue specificity

Plasma FN (soluble dimeric form) is secreted by hepatocytes. Cellular FN (dimeric or cross-linked multimeric forms), made by fibroblasts, epithelial and other cell types, is deposited as fibrils in the extracellular matrix. Ugl-Y1, Ugl-Y2 and Ugl-Y3 are found in urine.

Involvement in disease

Glomerulopathy with fibronectin deposits 2

Sequence similarities

Contains 12 fibronectin type-I domains.
Contains 2 fibronectin type-II domains.
Contains 16 fibronectin type-III domains.

Developmental stage

Ugl-Y1, Ugl-Y2 and Ugl-Y3 are present in the urine from 0 to 17 years of age.

Post-translational modifications

Sulfated.
It is not known whether both or only one of Thr-2064 and Thr-2065 are/is glycosylated.
Forms covalent cross-links mediated by a transglutaminase, such as F13A or TGM2, between a glutamine and the epsilon-amino group of a lysine residue, forming homopolymers and heteropolymers (e.g. fibrinogen-fibronectin, collagen-fibronectin heteropolymers).
Phosphorylated by FAM20C in the extracellular medium.
Proteolytic processing produces the C-terminal NC1 peptide, anastellin.

Cellular localization

Secreted, extracellular space, extracellular matrix.

Images

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.
Example of mouse Fibronectin standard curve.

Background-subtracted data values (mean +/- SD) are graphed.

Interpolated concentrations of native Fibronectin in mouse serum and plasma samples.

The concentrations of Fibronectin were measured in duplicates, interpolated from the Fibronectin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 1:4,000, plasma (citrate) 1:4,000, plasma (EDTA) 1: 8,000, and plasma (heparin) 1: 10,000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 100 µg/mL in serum, 172 µg/mL in plasma (citrate), 220 µg/mL in plasma (EDTA) and 211 µg/mL in plasma (heparin).

Interpolated concentrations of native Fibronectin in mouse urine and cell culture supernatant samples.

The concentrations of Fibronectin were measured in duplicates, interpolated from the Fibronectin standard curves and corrected for sample dilution. Undiluted samples are as follows: urine 5% and L929 supernatant 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 979 ng/mL in urine and 300 ng/mL in L929 supernatant.
L929 cells were grown in the absence (unstimulated) or presence of Phorbol Myristate Acetate (PMA) and phytohemagglutinin (PHA) (stimulated) for 3 days. Fibronectin was measured in 2-fold diluted cell culture supernatants of unstimulated and PMA/PHA stimulated L929 and cell culture media. Measured values were interpolated from the Fibronectin Standard Curve diluted in Sample Diluent NS and corrected for dilution factor. Mean of duplicate values +/-SD are graphed: 300 ng/mL unstimulated, 2,209 ng/mL stimulated, and undetectable in media.

J774A.1 cells were grown in the absence (unstimulated) or presence of Phorbol Myristate Acetate (PMA) and phytohemagglutinin (PHA) (stimulated) for 3 days. Fibronectin was measured in 2-fold diluted cell culture supernatants of unstimulated and PMA/PHA stimulated J774A.1 and cell culture media. Measured values were interpolated from the Fibronectin Standard Curve diluted in Sample Diluent NS and corrected for dilution factor. Mean of duplicate values +/-SD are graphed: 294 ng/mL unstimulated, 27.3 ng/mL stimulated, and undetectable in media.

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