

Product datasheet

Human Fibronectin ELISA Kit ab219046

Recombinant **SimpleStep ELISA**

[5 References](#) [17 Images](#)

Overview

Product name Human Fibronectin ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	3			5%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	5			8.3%

Sample type

Cell culture supernatant, Milk, Serum, Cell culture extracts, Tissue Extracts, EDTA Plasma, Cit plasma

Assay type

Sandwich (quantitative)

Sensitivity

20.6 pg/ml

Range

125 pg/ml - 8000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	102	90% - 117%
Milk	102	91% - 111%
Serum	93	87% - 102%
Cell culture extracts	89	80% - 105%
Tissue Extracts	90	80% - 131%
EDTA Plasma	86	81% - 94%

Sample type	Average %	Range
Cit plasma	99	87% - 120%

Assay time

1h 30m

Assay duration

One step assay

Species reactivity

Reacts with: Human, Rhesus monkey

Does not react with: Cow

Product overview

Human Fibronectin ELISA Kit (ab219046) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Fibronectin protein in cell culture supernatant, cit plasma, edta plasma, milk, serum, tissue extracts, and cell culture extracts. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Fibronectin with 20.6 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](#)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

ASSAY SPECIFICITY This kit recognizes both native and recombinant human Fibronectin protein in serum, plasma (citrate and EDTA), milk, cell culture supernatant, and cell and tissue extract samples only.

CROSS REACTIVITY Recombinant human Anastelin was prepared within the working range of the assay and assayed for cross reactivity. No cross-reactivity was observed.

SPECIES REACTIVITY This kit recognizes human Fibronectin protein.

Other species reactivity was determined by measuring 1/100,000 serum (mouse, rat, cow) or plasma (Rhesus macaque) samples of various species, interpolating the protein concentrations from the human standard curve, and expressing the interpolated concentrations as a percentage of the protein concentration in human serum or plasma assayed at the same dilution.

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 and nerve regeneration. Differential expression of fibronectin is seen in coronary heart disease, glomerulopathy and tumor cell metastasis. The protein contains binding

sites for collagen, heparin and fibrin and is a specific ligand for several integrin adhesion receptors. Fibronectin exists as a dimer or multimer.

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.

It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

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

Properties

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

Components	1 x 96 tests
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4BR	1 x 6ml
10X Human Fibronectin Capture Antibody	1 x 600µl
10X Human Fibronectin Detector Antibody	1 x 600µl
Human Fibronectin Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

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).

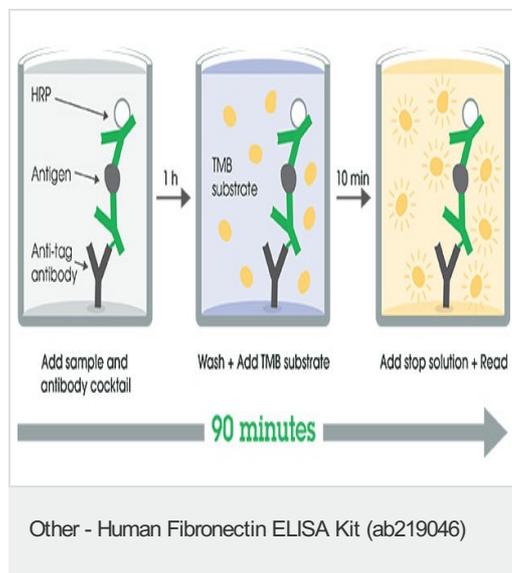
Phosphorylated by FAM20C in the extracellular medium.

Proteolytic processing produces the C-terminal NC1 peptide, anastellin.

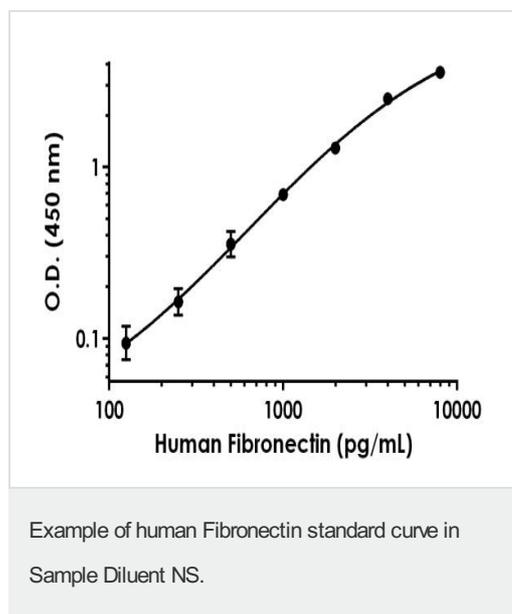
Cellular localization

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.

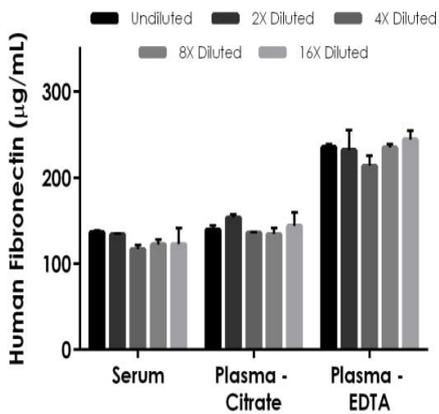


Background-subtracted data values (mean +/- SD) are graphed.

Standard Curve Measurements			
Concentration (pg/mL)	O.D 450 nm		Mean O.D
	1	2	
0	0.148	0.161	0.154
125	0.234	0.264	0.249
250	0.298	0.340	0.319
500	0.468	0.555	0.511
1,000	0.816	0.874	0.845
2,000	1.453	1.443	1.448
4,000	2.622	2.704	2.663
8,000	3.687	3.760	3.724

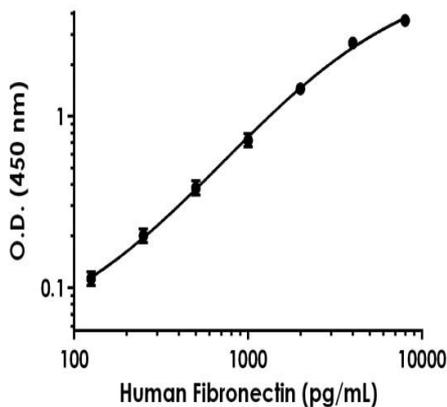
Example of human Fibronectin standard curve in Sample Diluent NS.

Example of human Fibronectin standard curve in Sample Diluent NS. The Fibronectin standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native Fibronectin in human 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 1/20,000, plasma (citrate) 1/20,000, and plasma (EDTA) 1/40,000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 126.5 µg/mL in serum, 141.5 µg/mL in plasma (citrate), and 232.1 µg/mL in plasma (EDTA).



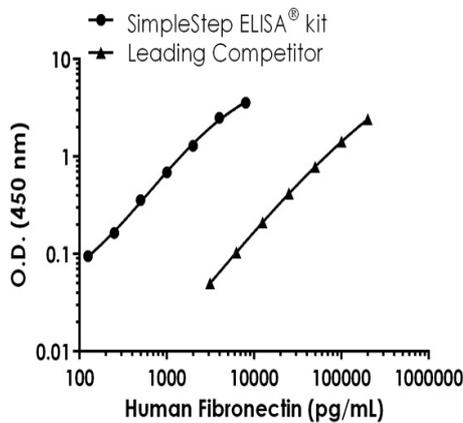
Example of human Fibronectin standard curve in 1X Cell Extraction Buffer PTR.

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

Standard Curve Measurements			
Concentration (pg/mL)	O.D 450 nm		Mean O.D
	1	2	
0	0.157	0.153	0.155
125	0.275	0.260	0.267
250	0.369	0.342	0.356
500	0.563	0.510	0.537
1,000	0.926	0.833	0.880
2,000	1.668	1.537	1.603
4,000	2.996	2.686	2.841
8,000	3.821	3.733	3.777

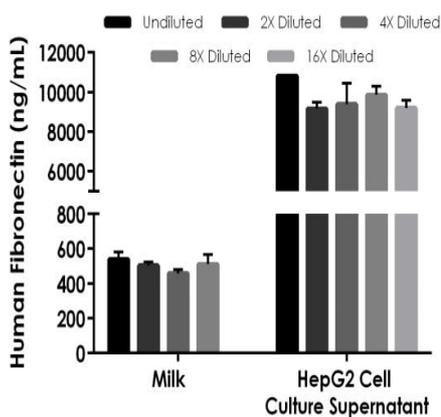
Example of human Fibronectin standard curve in 1X Cell Extraction Buffer PTR.

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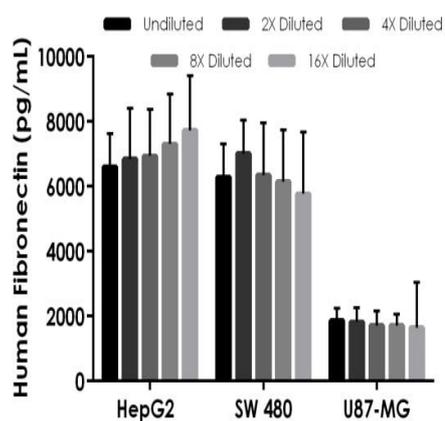
Human Fibronectin standard curve comparison data

Standard curve comparison between human Fibronectin SimpleStep ELISA[®] kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows comparable sensitivity.



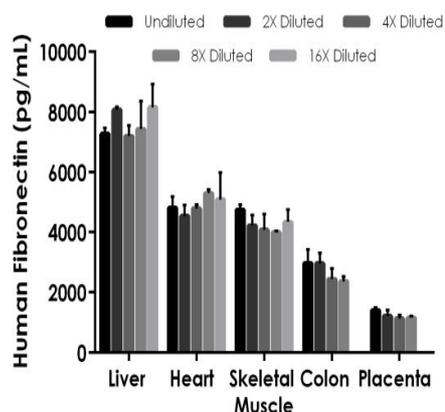
Interpolated concentrations of native Fibronectin in human breast milk and HepG2 cell culture supernatant (4 days) samples.

The concentrations of Fibronectin were measured in duplicates, interpolated from the Fibronectin standard curves and corrected for sample dilution. Undiluted samples are as follows: milk 1/100, and HepG2 cell culture supernatant 1/2000. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 502.9 ng/mL in milk, and 9683 ng/mL in HepG2 cell culture supernatant.



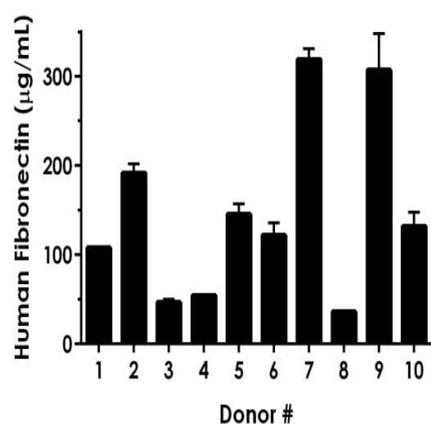
Interpolated concentrations of native Fibronectin in HepG2, SW 480 and U87-MG cell extracts.

Interpolated concentrations of native Fibronectin in human HepG2 cell extract samples based on a 25 µg/mL extract load, SW 480 cell extract samples based on a 100 µg/mL extract load, and U87-MG cell extract samples based on a 5 µg/mL extract load. The concentrations of Fibronectin were measured in duplicate and interpolated from the Fibronectin standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 7085 pg/mL in HepG2 cell extract, 6314 pg/mL in SW 480 cell extract, and 1749 pg/mL in U87-MG cell extract.



Interpolated concentrations of native Fibronectin in various tissue extracts.

Interpolated concentrations of native Fibronectin in human liver tissue extract based on a 100 µg/mL extract load, heart tissue extract based on a 100 µg/mL extract load, skeletal muscle based on a 100 µg/mL extract load, colon tissue extract based on a 5 µg/mL extract load, and placenta tissue extract based on a 1.25 µg/mL extract load. The concentrations of Fibronectin were measured in duplicate and interpolated from the Fibronectin standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 7634 pg/mL in liver tissue extract, 4910 pg/mL in heart tissue extract, 4278 pg/mL in skeletal muscle tissue extract, 2684 pg/mL in colon tissue extract, and 1224 pg/mL in placenta tissue extract.



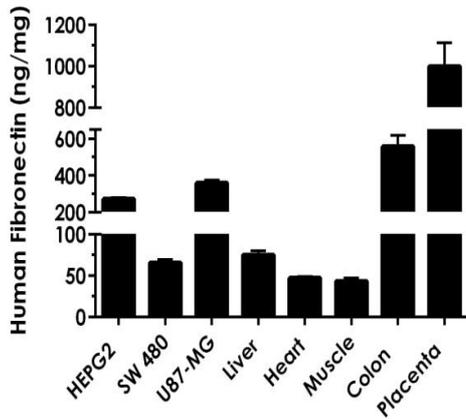
Serum from ten individual healthy male human donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Fibronectin concentration was determined to be 146.2 µg/mL with a range of 35.99 – 319.2 µg/mL.

Sample Diluent Buffer	n=	Minimal Detectable Dose
Sample Diluent NS	16	20.6 pg/mL
1X Cell Extraction Buffer PTR	32	22.3 pg/mL

Assay sensitivity.

The MDD was determined by calculating the mean of zero standard replicates and adding 2 standard deviations then extrapolating the corresponding concentration.



Interpolated concentrations of native Fibronectin in human cell and tissue extract samples.

The concentrations of Fibronectin were measured in three different dilutions in duplicate and interpolated from the Fibronectin standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted in ng of Fibronectin per mg of extract (mean +/- SD, n=3). Fibronectin concentration was determined to be 271.8 ng/mg in HepG2 cell extract, 65.52 ng/mg in SW 480 cell extract, 359.6 ng/mg in U87-MG cell extract, 75.22 ng/mg in liver tissue extract, 47.20 ng/mg in heart tissue extract, 43.52 ng/mg in skeletal muscle tissue extract, 557.9 ng/mg in colon tissue extract, and 998.8 ng/mg in placenta tissue extract samples.

Dilution Factor	Interpolated value	1/20,000 Human Serum	1/20,000 Human Plasma (Citrate)	1/40,000 Human Plasma (EDTA)	1/100 De-fatted Breast Milk	1/2,000 HepG2 SN (4 days)
Undiluted	pg/mL	6832	6984	5890	5398	5408
	% Expected value	100	100	100	100	100
2	pg/mL	3349	3836	2901	2520	2289
	% Expected value	98	110	99	93	85
4	pg/mL	1459	1700	1335	1144	1174
	% Expected value	85	97	91	85	87
8	pg/mL	765.2	838.8	733.9	638.1	616.5
	% Expected value	90	96	100	95	91%
16	pg/mL	383.3	450.1	381.8	NL	287.1
	% Expected value	90	103	104	NL	85

NL - Non-Linear

Linearity of dilution.

Linearity of dilution is determined based on interpolated values from the standard curve. Linearity of dilution defines a sample concentration interval in which interpolated target concentrations are directly proportional to sample dilution.

Native Fibronectin was measured in serum, plasma, de-fatted breast milk, and cell culture supernatant (SN) samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS.

Dilution Factor	Interpolated value	25 µg/mL HepG2 Cell Extract	100 µg/mL SW 480 Cell Extract	5 µg/mL U87-MG Cell Extract
Undiluted	pg/mL	6602	6291	1860
	% Expected value	100	100	100
2	pg/mL	3423	3508	909.3
	% Expected value	104	112	98
4	pg/mL	1735	1587	428.9
	% Expected value	105	101	92
8	pg/mL	913.2	767.8	213.6
	% Expected value	111	98	92
16	pg/mL	483.2	360.7	102.7
	% Expected value	117	92	88

Linearity of dilution.

Native Fibronectin was measured in the following biological samples in a 2-fold dilution series. Sample dilutions are made in 1X Cell Extraction Buffer PTR.

Dilution Factor	Interpolated value	100 µg/mL Liver Tissue Extract	100 µg/mL Heart Tissue Extract	100 µg/mL Skeletal Muscle Tissue Extract	5 µg/mL Colon Tissue Extract	1.25 µg/mL Placenta Tissue Extract
Undiluted	pg/mL	7282	4817	4758	2973	1405
	% Expected value	100	100	100	100	100
2	pg/mL	4040	2273	2109	1481	607.0
	% Expected value	111	94	89	100	86
4	pg/mL	1801	1199	1020	608.6	281.5
	% Expected value	99	100	86	82	80
8	pg/mL	929.9	662.7	499.6	295.8	143.8
	% Expected value	102	110	84	80	82
16	pg/mL	510.3	318.3	270.9	NL	NL
	% Expected value	112	106	91	NL	NL

NL - Non-Linear

Linearity of dilution.

Native Fibronectin was measured in the following biological samples in a 2-fold dilution series. Sample dilutions are made in 1X Cell Extraction Buffer PTR.

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Confirmed specificity



Ethical standards compliant
Animal-free production

Sandwich ELISA - Human Fibronectin ELISA Kit
(ab219046)

To learn more about the advantages of recombinant antibodies see [here](#).

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