

Product datasheet

Human FGF21 ELISA Kit ab222506

Recombinant SimpleStep ELISA[®]

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Overview

Product name Human FGF21 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

| Sample | n | Mean | SD | CV% |
|--------|---|------|----|------|
| Serum | 8 | | | 5.3% |

Inter-assay

| Sample | n | Mean | SD | CV% |
|--------|---|------|----|------|
| Serum | 3 | | | 5.5% |

Sample type Milk, Serum, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 3.3 pg/ml

Range 31.25 pg/ml - 2000 pg/ml

Recovery

Sample specific recovery

| Sample type | Average % | Range |
|-------------|-----------|-------------|
| Milk | 108 | 107% - 110% |
| Serum | 93 | 86% - 104% |
| Hep Plasma | 91 | 90% - 93% |
| EDTA Plasma | 92 | 85% - 97% |
| Cit plasma | 74 | 72% - 77% |

Assay time 1h 30m

Assay duration One step assay

Species reactivity

Product overview

Reacts with: Human

Human FGF21 ELISA Kit (ab222506) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of FGF21 protein in cit plasma, edta plasma, hep plasma, milk, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human FGF21 with 3.3 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 FGF-21 protein in serum, plasma, and milk.

Cell culture extract samples have not been tested with this kit.

CROSS REACTIVITY Recombinant mouse FGF-21 and rat FGF-21 were prepared at 2,000 pg/mL and assayed for cross reactivity. No cross-reactivity was observed with mouse FGF-21. 2,000 pg /mL of rat FGF-21 was interpolated as 867 pg/mL against the human FGF-21 standard.

SPECIES REACTIVITY This kit recognizes human FGF-21 protein. Other species reactivity was determined by measuring neat serum 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 assayed at the same dilution. Reactivity < 3% was determined for mouse. Reactivity of > 3% was determined for Rat and Cow.

Notes

FGF-21, or Fibroblast growth factor 21, is a member of the fibroblast growth factor family encoded by the gene FGF21. FGF-21 helps regulate glucose homeostasis by mediating liver signaling to the brain by inducing phosphorylation of the mitogen-activated protein kinase extracellular signal-related kinase 1. FGF-21 is principally expressed in the liver in response to fasting, where it mediates several metabolic responses such as ketogenesis, hepatic fatty acid oxidation, and resistance to growth hormones. In addition, it is involved with embryonic development, cell growth, morphogenesis, and tissue repair. Serum levels of FGF-21 have been found to be elevated in patients with type 2 diabetes mellitus, and higher levels of FGF-21 also correlate with higher liver fat content.

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

Properties

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

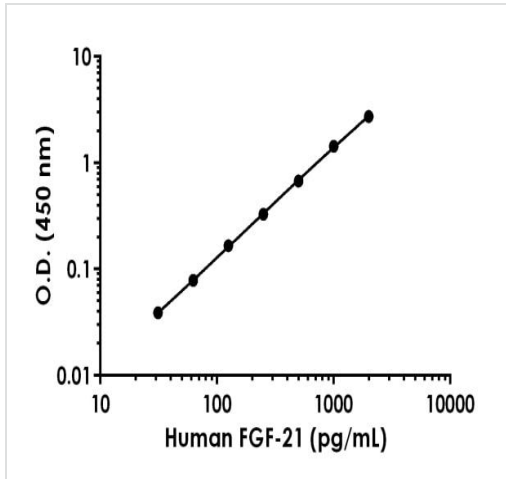
| Components | 1 x 96 tests | 10 x 96 tests |
|---|--------------|---------------|
| 10X Human FGF-21 Capture Antibody | 1 x 600µl | 1 x 6000µl |
| 10X Human FGF-21 Detector Antibody | 1 x 600µl | 1 x 6000µl |
| 10X Wash Buffer PT (ab206977) | 1 x 20ml | 1 x 200ml |
| Antibody Diluent 5BI | 1 x 6ml | 10 x 6ml |
| Human FGF-21 Lyophilized Recombinant Protein | 2 vials | 2 x 10 vials |
| Plate Seals | 1 unit | 1 x 10 units |
| Sample Diluent NS (ab193972) | 1 x 50ml | 2 x 250ml |
| SimpleStep Pre-Coated 96-Well Microplate (ab206978) | 1 unit | 1 x 10 units |
| Stop Solution | 1 x 12ml | 1 x 120ml |
| TMB Development Solution | 1 x 12ml | 1 x 120ml |

Function Stimulates glucose uptake in differentiated adipocytes via the induction of glucose transporter SLC2A1/GLUT1 expression (but not SLC2A4/GLUT4 expression). Activity requires the presence of KLB.

Sequence similarities Belongs to the heparin-binding growth factors family.

Cellular localization Secreted.

Images



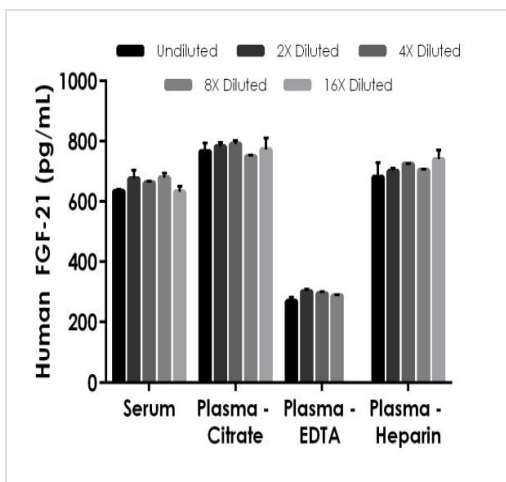
Example of human FGF-21 standard curve in Sample Diluent NS.

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

| Standard Curve Measurements | | | |
|-----------------------------|------------|-------|----------|
| Concentration (pg/mL) | O.D 450 nm | | Mean O.D |
| | 1 | 2 | |
| 0 | 0.053 | 0.055 | 0.054 |
| 31.25 | 0.093 | 0.092 | 0.093 |
| 62.5 | 0.134 | 0.130 | 0.132 |
| 125 | 0.227 | 0.213 | 0.220 |
| 250 | 0.395 | 0.373 | 0.384 |
| 500 | 0.730 | 0.735 | 0.733 |
| 1,000 | 1.515 | 1.481 | 1.498 |
| 2,000 | 2.796 | 2.770 | 2.783 |

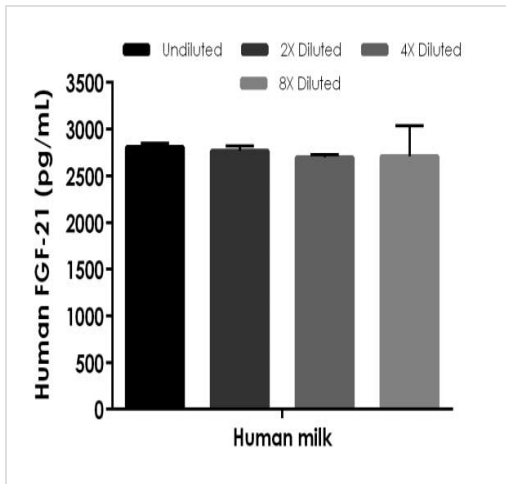
Standard curve

Example of human FGF-21 standard curve in Sample Diluent NS. The FGF-21 standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



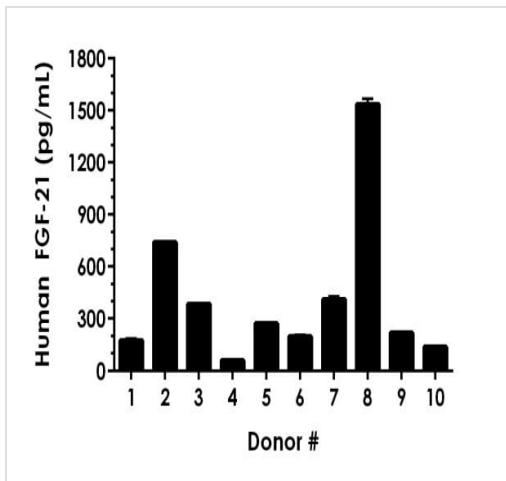
Interpolated concentrations of native FGF-21 in human serum and plasma samples.

The concentrations of FGF-21 were measured in duplicates, interpolated from the FGF-21 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%, plasma (citrate) 100%, plasma (EDTA) 100%, and plasma (heparin) 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean FGF-21 concentration was determined to be 657 pg/mL in neat serum, 772 pg/mL in neat plasma (citrate), 289 pg/mL in neat plasma (EDTA), and 711 pg/mL in neat plasma (heparin).



Interpolated concentrations of spiked FGF-21 in human breast milk samples.

The concentrations of FGF-21 was measured in duplicates, interpolated from the FGF-21 standard curves and corrected for sample dilution. Undiluted samples are as follows: milk 12.5%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).



Neat serum samples from ten individual healthy human female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean FGF-21 concentration was determined to be 413 pg/mL with a range of 59.4 – 1,537 pg/mL.

| Dilution Factor | Interpolated value | 100% Human Serum | 100% Human Plasma (Citrate) | 100% Native Human Plasma (EDTA) | 100% Spiked Human Plasma (EDTA) | 100% Human Plasma (Heparin) |
|-----------------|--------------------|------------------|-----------------------------|---------------------------------|---------------------------------|-----------------------------|
| Undiluted | pg/mL | 635 | 767 | 269 | 1,265 | 682 |
| | % Expected value | 100 | 100 | 100 | 100 | 100 |
| 2 | pg/mL | 338 | 391 | 151 | 670 | 351 |
| | % Expected value | 106 | 102 | 112 | 106 | 103 |
| 4 | pg/mL | 166 | 198 | 74 | 337 | 181 |
| | % Expected value | 104 | 103 | 110 | 107 | 106 |
| 8 | pg/mL | 85 | 94 | 36 | 170 | 88 |
| | % Expected value | 107 | 98 | 107 | 108 | 103 |
| 16 | pg/mL | 34 | 48 | ND | 84 | 46 |
| | % Expected value | 100 | 101 | ND | 107 | 109 |

ND - Non-Detectable

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 human FGF-21 was measured in serum and plasma samples in a 2-fold dilution series. Sample dilutions are made in Sample Diluent NS for serum and plasma samples.

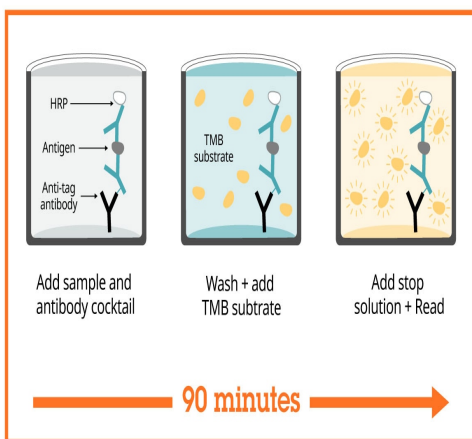
Recombinant human FGF-21 was spiked into EDTA plasma samples and diluted in a 2-fold dilution series in Sample Diluent NS.

| Dilution Factor | Interpolated value | 12.5% Human milk |
|-----------------|--------------------|------------------|
| Undiluted | pg/mL | 351 |
| | % Expected value | 100 |
| 2 | pg/mL | 173 |
| | % Expected value | 99 |
| 4 | pg/mL | 84 |
| | % Expected value | 96 |
| 8 | pg/mL | 42 |
| | % Expected value | 97 |
| 16 | pg/mL | 17 |
| | % Expected value | ND |

ND - Not Detectable

Linearity of dilution.

Recombinant human FGF-21 was spiked into human milk sample and diluted in a 2-fold dilution series in Sample Diluent NS.



Sandwich ELISA - Human FGF21 ELISA Kit
(ab222506)

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.

Powered by
recombinant antibodies



Research with confidence
Consistent and reproducible results



Long-term and scalable supply
Recombinant technology



Success from the first experiment
Confirmed specificity



Ethical standards compliant
Animal-free production

Sandwich ELISA - Human FGF21 ELISA Kit
(ab222506)

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

Get more done with
SimpleStep ELISA



Easy to use
Single-wash 90-minute protocol



Flexible
Matched antibody pairs available



Precision antibodies
High sensitivity, specificity and reproducibility



Scalable
Now in 10-pack and 384-well formats

Sandwich ELISA - Human FGF21 ELISA Kit
(ab222506)

To learn more about the advantages of SimpleStep ELISA[®] kits see [here](#).

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