

## Product datasheet

### Human BDNF ELISA Kit ab212166

SimpleStep ELISA

★★★★☆ [2 Abreviews](#) [19 References](#) [8 Images](#)

#### Overview

**Product name** Human BDNF ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

| Sample | n | Mean | SD | CV%  |
|--------|---|------|----|------|
| Serum  | 5 |      |    | 2.8% |

Inter-assay

| Sample | n | Mean | SD | CV%  |
|--------|---|------|----|------|
| Serum  | 3 |      |    | 5.3% |

**Sample type**

Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma, Cerebral Spinal Fluid

**Assay type**

Sandwich (quantitative)

**Sensitivity**

2.4 pg/ml

**Range**

15.6 pg/ml - 1000 pg/ml

#### Recovery

Sample specific recovery

| Sample type              | Average % | Range       |
|--------------------------|-----------|-------------|
| Cell culture supernatant | 106       | 103% - 109% |
| Serum                    | 97        | 94% - 104%  |
| Hep Plasma               | 103       | 96% - 112%  |
| EDTA Plasma              | 98        | 85% - 108%  |
| Cit plasma               | 103       | 95% - 111%  |
| Cerebral Spinal Fluid    | 95        | 88% - 104%  |

|                           |   |
|---------------------------|---|
| <b>Assay time</b>         | 1h 30m  |
| <b>Assay duration</b>     | One step assay  |
| <b>Species reactivity</b> | <b>Reacts with:</b> Human   |
| <b>Product overview</b>   | Human BDNF ELISA Kit (ab212166) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of BDNF protein in cell culture supernatant, serum, cit plasma, edta plasma, and hep plasma. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human BDNF with 2.4 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.

#### **SPECIES REACTIVITY**

This kit recognizes human BDNF protein and is cross-reactive to mouse and rat BDNF protein.

#### **ASSAY SPECIFICITY**

This kit recognizes both native and recombinant human BDNF protein in serum, plasma, and cell culture supernatant samples only.

Cell and tissue extract samples have not been tested with this kit.

#### **CROSS REACTIVITY**

Recombinant TRKB was prepared at 50 ng/mL and 500 pg/mL and assayed for cross reactivity. No cross-reactivity was observed.

#### **INTERFERENCE**

Recombinant TRKB was prepared at 50 ng/mL and 1 ng/mL and tested for interference with human BDNF at 200 pg/mL. 39% Interference was observed with 1ng/mL and 76% Interference was observed with 50 ng/mL.

**Notes** BDNF (Brain derived neurotrophic factor) is a member of the neurotrophin family of growth factors that includes nerve growth factor. BDNF is expressed as a proprotein that is cleaved to form

mature BDNF (residues 129-247). This assay measures mature BDNF. Mature BDNF protein sequence is identical between human, mouse, rat and many additional species. BDNF binds to at least 2 receptors: TrkB and LNGFR.

**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 | 1 x 96 tests |
|---|--------------|--------------|
| 10X Human BDNF Capture Antibody                     | 1 x 600µl    | 1 x 600µl    |
| 10X Human BDNF Detector Antibody                    | 1 x 600µl    | 1 x 600µl    |
| 10X Wash Buffer PT (ab206977)                       | 1 x 20ml     | 1 x 20ml     |
| Antibody Diluent CPI2                               | 1 x 6ml      | 1 x 6ml      |
| Human BDNF Lyophilized Recombinant Protein          | 2 vials      | 2 vials      |
| Plate Seals   | 1 unit       | 1 unit       |
| Sample Diluent NS (ab193972)                        | 1 x 50ml     | 1 x 50ml     |
| SimpleStep Pre-Coated 96-Well Microplate (ab206978) | 1 unit       | 1 unit       |
| Stop Solution                                       | 1 x 12ml     | 1 x 12ml     |
| TMB Development Solution                            | 1 x 12ml     | 1 x 12ml     |

**Function** During development, promotes the survival and differentiation of selected neuronal populations of the peripheral and central nervous systems. Participates in axonal growth, pathfinding and in the modulation of dendritic growth and morphology. Major regulator of synaptic transmission and plasticity at adult synapses in many regions of the CNS. The versatility of BDNF is emphasized by its contribution to a range of adaptive neuronal responses including long-term potentiation (LTP), long-term depression (LTD), certain forms of short-term synaptic plasticity, as well as homeostatic regulation of intrinsic neuronal excitability.

**Tissue specificity** Brain. Highly expressed in hippocampus, amygdala, cerebral cortex and cerebellum. Also expressed in heart, lung, skeletal muscle, testis, prostate and placenta.

**Involvement in disease** Bulimia nervosa 2  
Congenital central hypoventilation syndrome

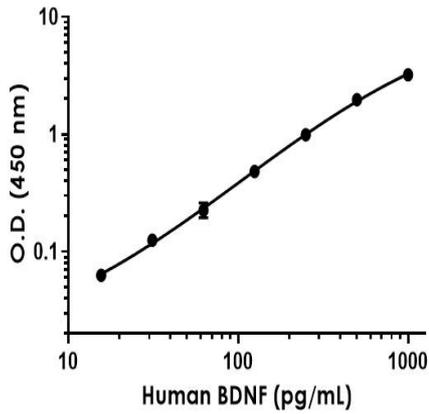
**Sequence similarities** Belongs to the NGF-beta family.

**Post-translational modifications** The propeptide is N-glycosylated and glycosulfated. Converted into mature BDNF by plasmin (PLG).

**Cellular localization** Secreted.

## Images

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



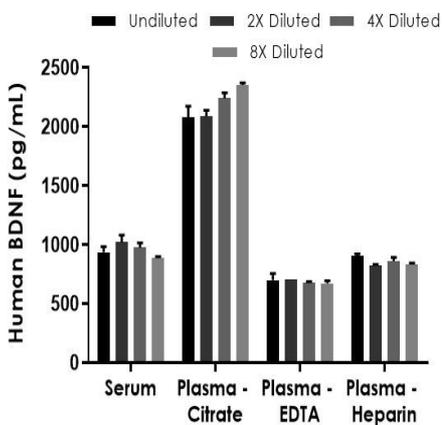
Example of human BDNF standard curve.

The BDNF standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.

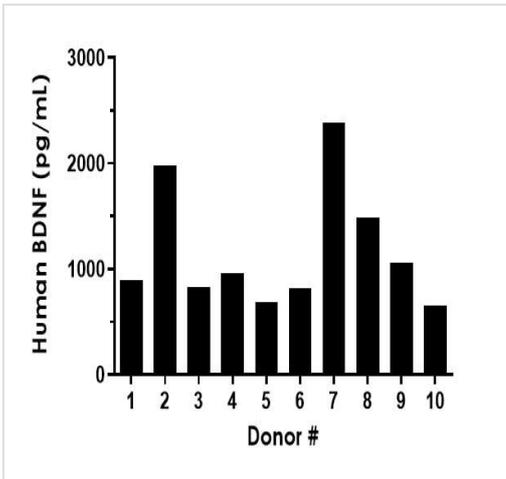
| Standard Curve Measurements |            |       |          |
|-----------------------------|------------|-------|----------|
| Concentration (pg/mL)       | O.D 450 nm |       | Mean O.D |
|                             | 1          | 2     |          |
| 0                           | 0.082      | 0.081 | 0.081    |
| 15.6                        | 0.149      | 0.139 | 0.144    |
| 31.3                        | 0.209      | 0.203 | 0.206    |
| 62.5                        | 0.330      | 0.284 | 0.307    |
| 125                         | 0.557      | 0.566 | 0.561    |
| 250                         | 1.077      | 1.067 | 1.072    |
| 500                         | 2.022      | 2.089 | 2.055    |
| 1,000                       | 3.294      | 3.282 | 3.288    |

Example of human BDNF standard curve in Sample Diluent NS.

The concentrations of BDNF were measured in duplicates, interpolated from the BDNF standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 10%, plasma (citrate) 10%, plasma (EDTA) 10%, and plasma (heparin) 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean BDNF concentration was determined to be 954 pg/mL in serum, 2,189 pg/mL in plasma (citrate), 690 pg/mL in plasma (EDTA) and 856 pg/mL in plasma (heparin).

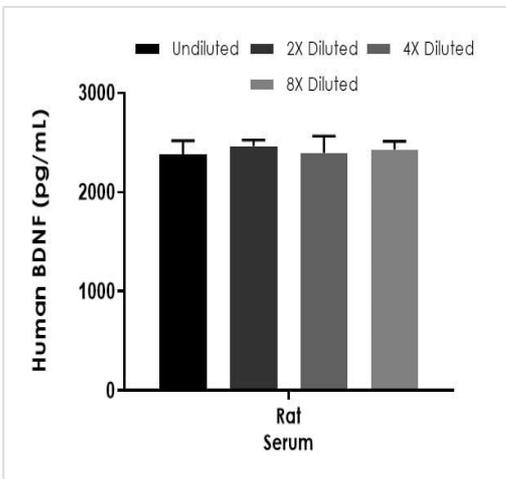


Interpolated concentrations of native BDNF in human serum, and plasma samples



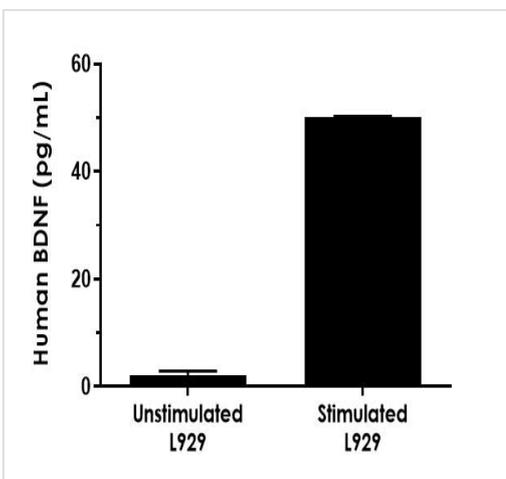
Serum from ten individual healthy human male and female donors was measured in duplicate.

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean BDNF concentration was determined to be 1,176 pg/mL with a range of 653 – 2,387 pg/mL.



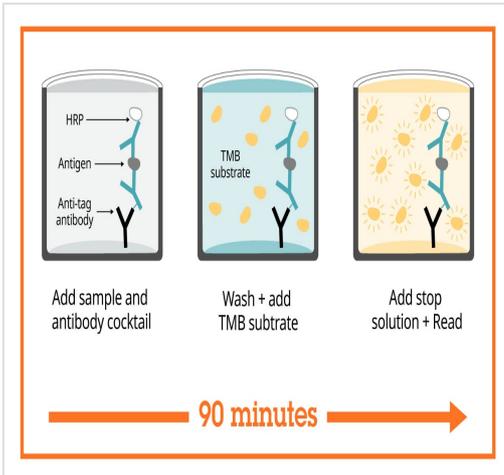
Interpolated concentrations of native BDNF in rat serum sample.

The concentrations of BDNF were measured in duplicates, interpolated from the BDNF standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean BDNF concentration was determined to be 2,471 pg/mL in serum.



Comparison of secreted BDNF in unstimulated and PMA/PHA-stimulated L929 Cells.

L929 cells were grown in the absence (unstimulated) or presence of Phorbol Myristate Acetate (PMA) and phytohemagglutinin (PHA) (stimulated) for 3 days. BDNF 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 BDNF Standard Curve diluted in Sample Diluent NS and corrected for dilution factor. Mean of duplicate values +/-SD are graphed: 2.3 pg/mL unstimulated, 50 pg/mL stimulated, and undetectable in media.



Sandwich ELISA - Human BDNF ELISA Kit  
(ab212166)

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.

**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

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

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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