

Human BDNF ELISA Kit, Fluorescent ab229395

CatchPoint® SimpleStep ELISA®

1 References 6 Images

Overview

Product name Human BDNF ELISA Kit, Fluorescent

Detection method Fluorescent

Precision Intra-assay

Sample	n	Mean	SD	CV%
human serum	5			2.8%

Inter-assay

Sample	n	Mean	SD	CV%
human serum	3			5.3%

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

Assay type Sandwich (quantitative)

Sensitivity 1.5 pg/ml

Range 2 pg/ml - 2000 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%

Assay time	1h 30m
Assay duration	One step assay
Species reactivity	Reacts with: Human
Product overview	BDNF <i>in vitro</i> CatchPoint SimpleStep ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of BDNF protein in human serum, plasma, and cell culture supernatant.

This CatchPoint SimpleStep ELISA kit has been **optimized for Molecular Devices Microplate Readers**. Click [here](#) for a list of recommended Microplate Readers.

If using a Molecular Devices' plate reader supported by SoftMax® Pro software, a preconfigured protocol for these CatchPoint SimpleStep ELISA Kits is available with all the protocol and analysis settings at www.softmaxpro.org.

The CatchPoint SimpleStep ELISA employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. CatchPoint HRP Development Solution containing the Stoplight Red Substrate is added. During incubation, the substrate is catalyzed by HRP generating a fluorescent product. Signal is generated proportionally to the amount of bound analyte and the intensity is measured in a fluorescence plate reader at 530/570/590 nm Excitation/Cutoff/Emission.

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

Storage instructions	Store at +4°C. Please refer to protocols.
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Components	1 x 96 tests
100X Stoplight Red Substrate	1 x 120µl
10X Human BDNF Capture Antibody	1 x 600µl
10X Human BDNF Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
500X Hydrogen Peroxide (H2O2, 3%)	1 x 50µl
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml

Components	1 x 96 tests
Human BDNF Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated Black 96-Well Microplate	1 unit
Stoplight Red Substrate Buffer	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.

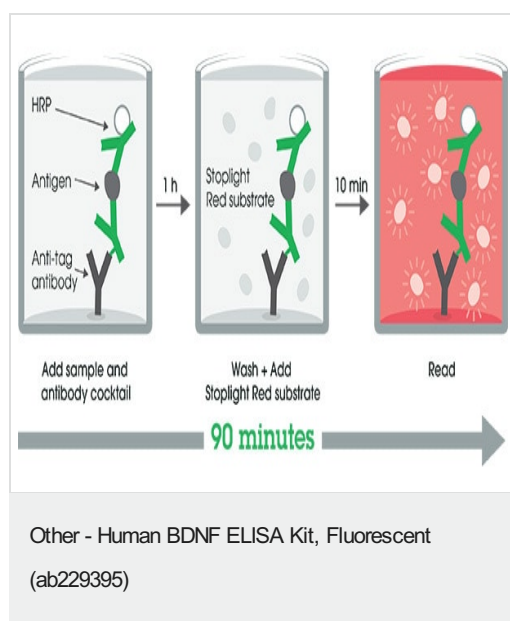
Post-translational modifications

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

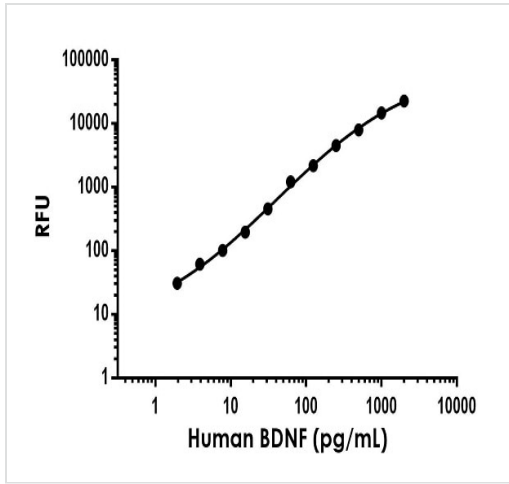
Cellular localization

Secreted.

Images

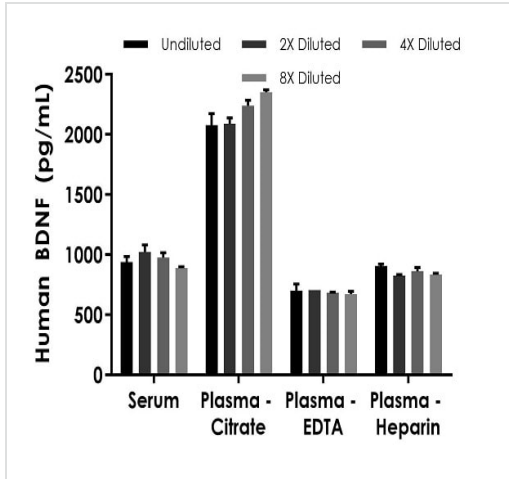


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



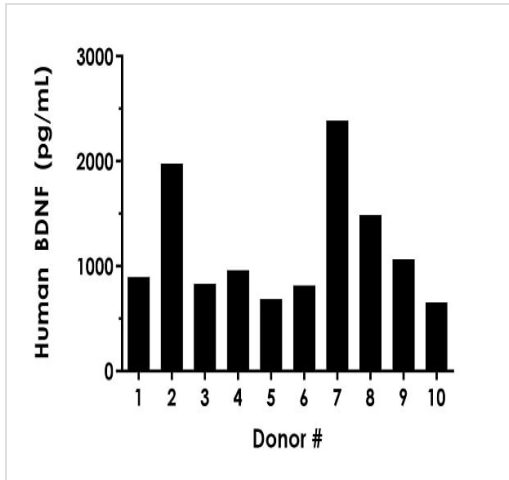
Human BDNF standard curve in Sample Diluent NS

The BDNF standard curve was prepared as described in Section 10.



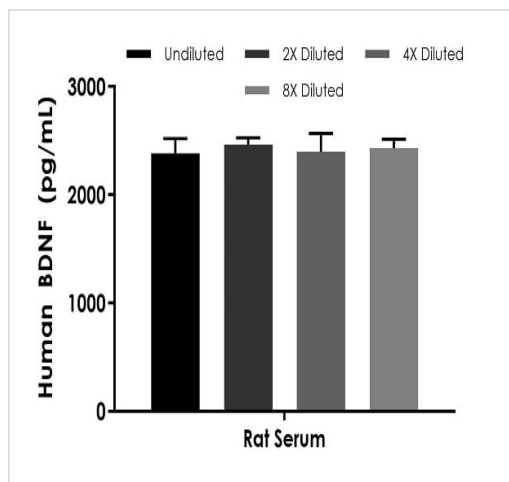
Interpolated concentrations of native BDNF in human serum, and plasma samples.

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 \pm 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).



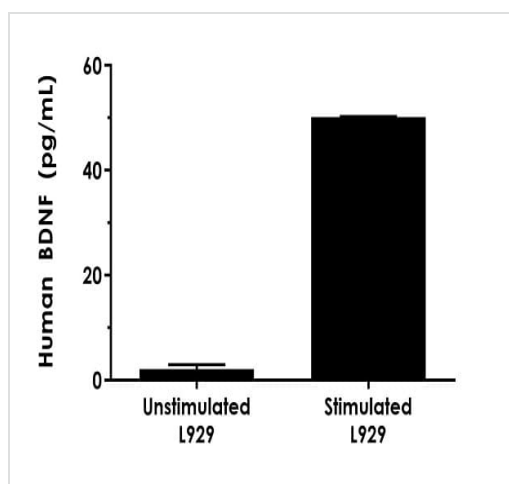
Serum from ten individual healthy human male and female donors was measured in duplicate

Interpolated dilution factor corrected values are plotted (mean \pm 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 \pm 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 \pm SD are graphed: 2.3 pg/mL unstimulated, 50 pg/mL stimulated, and undetectable in media.

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