

DESCRIPTION

Source *Spodoptera frugiperda*, Sf 21 (baculovirus)-derived BDNF protein
His129-Arg247
Accession # P23560
100% sequence homology with Mouse, Rat, Canine, Equine and all other mammalian proteins examined.

N-terminal Sequence Analysis His129

Predicted Molecular Mass 13.5 kDa

SPECIFICATIONS

SDS-PAGE 13-14 kDa, reducing conditions

Activity Measured in a cell proliferation assay using BaF mouse pro-B cells transfected with TrkB.
The ED₅₀ for this effect is 0.2-2 ng/mL.
The specific activity of Recombinant Human BDNF is approximately 1.3×10^3 units/ μ g, which is calibrated against recombinant human BDNF WHO Standard (NIBSC code: 96/534).

Measured by its binding ability in a functional ELISA.

When Recombinant Human TrkB Fc Chimera (Catalog # 688-TK) is coated at 1 μ g/mL, Recombinant Human BDNF binds with an apparent K_d <1 nM.

Endotoxin Level <0.10 EU per 1 μ g of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in Sodium Citrate and NaCl with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 25 μ g/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

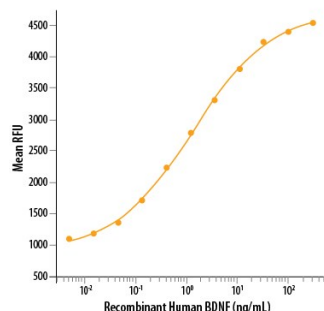
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

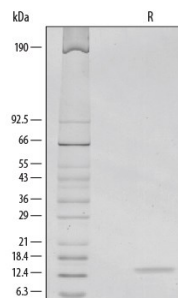
DATA

Bioactivity



Recombinant Human BDNF (Catalog # 248-BD) stimulates cell proliferation in the BaF mouse pro-B cell line transfected with TrkB. The ED₅₀ for this effect is 0.2-2 ng/mL.

SDS-PAGE



1 μ g/lane of Recombinant Human BDNF was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 13 kDa.

BACKGROUND

Brain-derived neurotrophic factor (BDNF) is a member of the NGF family of neurotrophic factors (also named neurotrophins) that are required for the differentiation and survival of specific neuronal subpopulations in both the central as well as the peripheral nervous system. The neurotrophin family is comprised of at least four proteins including NGF, BDNF, NT-3, and NT-4/5. These secreted cytokines are synthesized as prepropeptides that are proteolytically processed to generate the mature proteins (1, 2). All neurotrophins have six conserved cysteine residues that are involved in the formation of three disulfide bonds and all share approximately 55% sequence identity at the amino acid level. Similarly to NGF, bioactive BDNF is predicted to be a non-covalently linked homodimer.

BDNF cDNA encodes a 247 amino acid residue precursor protein with a signal peptide and a proprotein that are cleaved to yield the 119 amino acid residue mature BDNF. The amino acid sequence of mature BDNF is identical in all mammals examined. High levels of expression of BDNF have been detected in the hippocampus, cerebellum, fetal eye and placenta. In addition, low levels of BDNF expression are also found in the pituitary gland, spinal cord, heart, lung and skeletal muscle. BDNF binds with high affinity and specifically activates the TrkB tyrosine kinase receptor (3).

References:

1. Eide, F.F. *et al.* (1993) *Exp. Neurol.* **121**:200.
2. Snider, W.D. (1994) *Cell* **77**:627.
3. Barbacid, M. (1994) *J. Neurobiol.* **25**:1386.