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Human Brain-Derived Neurotrophic Factor (BDNF) Recombinant Protein

10 µg



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MW (kDa):
27

UniProt ID:
#P23560

Entrez-Gene Id:
627

Background

Neurotrophins are composed of at least four family members, including NGF, BDNF, NT-3, and NT-4, and all are known to influence growth, development, differentiation, and survival of neurons (1). Proneurotrophins bind to p75NTR, but not to the family of Trk receptor tyrosine kinases (Trk), and following maturation, BDNF binds and activates TrkB. Trk receptors, in turn, activate three major signaling pathways: (a) Ras-MAPK signaling, which promotes neuronal differentiation and neurite outgrowth, (b) PI3K/Akt signaling, which promotes survival and growth of neurons, and (c) PLC-γ1-PKC signaling, which promotes synaptic plasticity (2). BDNF is a major regulator of transmission and plasticity at adult synapses. Moreover, the precursor proBDNF and the mature protein mBDNF drive opposite effects on long-term potentiation and long-term depression (3). BDNF has also been implicated in body weight regulation and activity: heterozygous BDNF knockout mice are hyperphagic, obese, and hyperactive (4).

Endotoxin

Purity

> 96%

Source / Purification

Recombinant human BDNF was expressed in *E. coli* and is supplied in a lyophilized form.

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Background References

1. Minichiello, L. and Klein, R. (1996) *Genes Dev* 10, 2849-58.
2. Reichardt, L.F. (2006) *Philos Trans R Soc Lond B Biol Sci* 361, 1545-64.
3. Martinowich, K. et al. (2007) *Nat Neurosci* 10, 1089-93.
4. Kerner, S.G. et al. (2000) *EMBO J* 19, 1290-300.

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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