

BDNF proDomain Protein (WT-human)

Brain-Derived Neurotrophic Factor proDomain (WT-human), Recombinant, E. coli
Catalog # PG10003

Specification

BDNF proDomain Protein (WT-human) - Product Information**BDNF proDomain Protein (WT-human) - Additional Information****Storage**

-20°C

Precautions

BDNF proDomain Protein (WT-human) is for research use only and not for use in diagnostic or therapeutic procedures.

BDNF proDomain Protein (WT-human) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

BDNF proDomain Protein (WT-human) - Images**BDNF proDomain Protein (WT-human) - Background**

BDNF regulates neuronal survival, differentiation, and synaptic plasticity. It affects the release of excitatory neurotransmitters and has been found to affect cardiovascular development and function.¹ Like many other neurotrophins, BDNF is a cleavage product of the BDNF precursor proBDNF. This precursor may be cleaved by various proteases, intracellularly by furin and extracellularly by several proteases including prohormone convertases, plasminogen activator, MMP-3 and MMP-7 in vitro.^{2,3} Two different trans-membrane receptor proteins mediate BDNF and proBDNF signal transduction: the TrkB, and the pan-neurotrophic receptor p75NTR.⁴ ProBDNF has been demonstrated to induce TrkB phosphorylation in vitro and to bind p75NTR and sortilin to promote apoptosis.^{5,6} In many cases, the full prodomain region derived from the protein precursor has biological functions, for instance; the prodomain of the transforming growth factor β (TGF β) affects the dimerization and folding as well as the activity of the mature proteins via non-covalent association. The propeptide of the bone morphogenetic proteins BMP-4 and BMP-7 regulates the diffusion and distribution of these growth factors within the extracellular matrix.^{7,8} The prodomain region of the BDNF precursor plays an important role in regulating its intracellular trafficking to secretory pathways.⁹ However, the role of the full BDNF-prodomain, which is a product of proteolytic cleavage of proBDNF, is not clearly understood. Furthermore, binding competition

studies suggest that binding sites for BDNF prodomain are located in the tunnel of the ten-bladed b-propeller domain of sortilin. 10

BDNF proDomain Protein (WT-human) - References

1 . Segal, R. (2001)Sci. STKE,2001, pe1.2 . Hariri, A.R.et al.(2003)J. Neurosci.23, 6690.3 . Fahnestock, M.et al. (2001) Mol. Cell. Neurosci., 18, 210.4 . Dechant, G.et al.(1993)Development119,5455 . Mowla, S.J.et al. (2001) J. Biol. Chem.276, 12660.6 . Teng, H.K.et al. (2005). J. Neurosci.25, 5455.7 . Gray, A. M. and Mason, A.J. (1990) Science.247, 13288 . Gregory, K. E.et al. (2005) J. Biol. Chem.280, 27970.9 . Egan, M.et al. (2003) Cell,112, 25710 . Quistgaard, E. M.et al.(2008)Nature Structural & Molecular Biology,16, 96.