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proBDNF Protein (WT-human)

proBrain-Derived Neurotrophic Factor (WT-human), Recombinant,E.coli
Catalog # PG10005

Specification

proBDNF Protein (WT-human) - Product Information

proBDNF Protein (WT-human) - Additional Information

Storage
-20°C

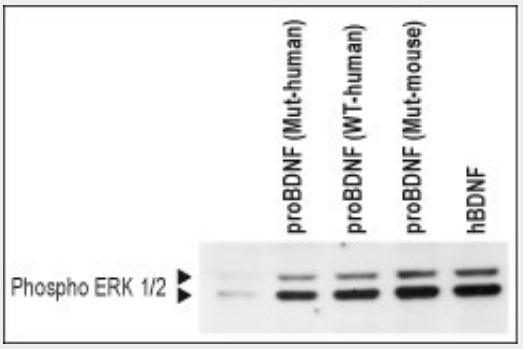
Precautions
proBDNF Protein (WT-human) is for research use only and not for use in diagnostic or therapeutic procedures.

proBDNF Protein (WT-human) - Protocols

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

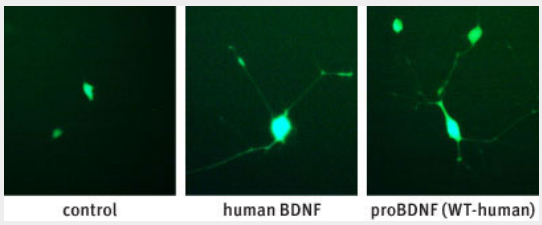
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

proBDNF Protein (WT-human) - Images



proBDNF_(WT-human) - Abgent proBDNF (WT-human) mediates ERK1 2 activation in TrkB transfected HEK293 cells.Transfected cells were serum depleted for 2 h and then challenged with or without proBDNF (Mut-human),proBDNF (WT-human)(#PG10005),proBDNF (Mut-mouse) or hBDNF for 10 min.Cell proteins were resolved by SDS-PAGE and detected with anti-TrkB and anti-phospho-ERK1/2.

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proBDNF_(WT-human) - Abgent proBDNF (WT-human) mediates neurite outgrowth in TrkB transfected PC12 cells.Cells were transiently transfected with TrkB/pcDNA3 containing the green fluorescence protein (GFP) as a reporter. One day post transfection, the cells were stimulated with 20 ng/ml proBDNF (WT-human) (#PG10005) or 10ng/ml hBDNF . Development of neurites was visualized after 6 days using bright light microscopy.

proBDNF Protein (WT-human) - Background

BDNF is a neurotrophic factor produced by proteolytic cleavage of its precursor, proBDNF. The biologically relevant form of the protein was thought to be the mature form, BDNF.1 The actions of BDNF are mediated via the binding to TrkB or p75 .2,3The precursor form was thought to be important for the correct folding, secretion and trafficking of the mature protein. A single-nucleotide polymorphism (Val66 to Met) in the pro-domain of the human BDNF gene impairs intracellular trafficking and regulated secretion of BDNF in primary cortical neurons and neurosecretory cells but not in endothelial and vascular cells.4 This has been shown to affect memory and lead to abnormal hippocampal function in humans.5The finding that proBDNF and not mature BDNF is the preferred ligand for p75, has ushered in a new era which reexamines the biological roles of the two forms.6 Some biological roles for proBDNF have been proposed. It has been shown to be a pro-apoptotic ligand for sympathetic neurons7 expressing both p75 and sortlin, and to be involved in LTD8. On the other hand it has also been shown to elicit prototypical TrkB responses in biological assays, such as TrkB tyrosine phosphorylation, and activation of ERK1/2.9In brain homogenates a mixture of both, proBDNF and mature BDNF has been found10,11 and in cortical neurons secretion of proBDNF has been shown.7 Binding of both proBDNF and mature BDNF to TrkB has been proposed to be via the R103 residue in the mature portion.9

proBDNF Protein (WT-human) - References

1 . Bibel, M and Barde, Y.A.(2000)Genes Dev.14,29292 . Cahoon-Metzger, S.M.et al. (2001) Dev. Biol.232,246.3 . Troy, C.M.et al. (2002) J. Biol. Chem.277,34295.4 . Chen, Z.Y.et al. (2004) J. Neurosci.24,4401.5 . Egan, M.F.et al.(2003)Cell112,257.6 . Lee, R.et al.,(2001)Science294,1945.7 . Teng, H.K.et al. (2005) J. Neurosci.25,5455.8 . Woo, N.H.et al.(2005)Nat. Neurosci.8,1069.9 . Fayard, B.et al. (2005) J. Neurosci. Res.80,18.10 . Michalski, B and Fahnestock, M. (2003)Mol. Brain Res.111,148.11 . Zhou, X.F.et al.(2004)J. Neurochem.91,704.