

Recombinant Human PTN Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50816

Size: 10ug, 100ug

Protein Name: Pleiotrophin (PTN) (Heparin-binding brain mitogen) (HBBM) (Heparin-binding growth factor 8) (HBGF-8) (Heparin-binding growth-associated molecule) (HB-GAM) (Heparin-binding neurite outgrowth-promoting factor) (HBNF) (Heparin-binding neurite outgrowth-promoting factor 1) (HBNF-1) (Osteoblast-specific factor 1) (OSF-1)

Synonym: PTN, HBNF1, NEGF1

UniProt ID: P21246

UniProt Link: www.uniprot.org/uniprotkb/P21246/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 168 AA

Molecular Weight: 19 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MQAQQYQQRRKFAAAFLAFIFILAAVDTAEGKKEKPEKKVKKSDCGEWQWSVCVPTSGDCGLG
TREGTRTGAECKQTMKTQRCKIPCNWKKQFGAECKYQFQAWGECDLNTALKTRTGSLKRALHNAE
CQKTVTISKPCGKLTCPKPQAESKKKKKEGKKQEKMLD

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions



Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Pleiotrophin (PTN) (Heparin-binding brain mitogen) (HBBM) (Heparin-binding growth factor 8) (HBGF-8) (Heparin-binding growth-associated molecule) (HB-GAM) (Heparin-binding neurite outgrowth-promoting factor) (HBNF) (Heparin-binding neurite outgrowth-promoting factor 1) (HBNF-1) (Osteoblast-specific factor 1) (OSF-1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Secreted growth factor that mediates its signal through cell-surface proteoglycan and non-proteoglycan receptors (PubMed:11278720, PubMed:16814777, PubMed:19141530). Binds cell-surface proteoglycan receptor via their chondroitin sulfate (CS) groups (PubMed:26896299, PubMed:27445335). Thereby regulates many processes like cell proliferation, cell survival, cell growth, cell differentiation and cell migration in several tissues namely neuron and bone (PubMed:11278720, PubMed:1733956, PubMed:1768439, PubMed:19141530, PubMed:19442624, PubMed:27445335, PubMed:30667096). Also plays a role in synaptic plasticity and learning-related behavior by inhibiting long-term synaptic potentiation (By similarity). Binds PTPRZ1, leading to neutralization of the negative charges of the CS chains of PTPRZ1, inducing PTPRZ1 clustering, thereby causing the dimerization and inactivation of its phosphatase activity leading to increased tyrosine phosphorylation of each of the PTPRZ1 substrates like ALK, CTNNB1 or AFAP1L2 in order to activate the PI3K-AKT pathway (PubMed:10706604, PubMed:16814777, PubMed:17681947, PubMed:27445335, PubMed:30667096). Through PTPRZ1 binding controls oligodendrocyte precursor cell differentiation by enhancing the phosphorylation of AFAP1L2 in order to activate the PI3K-AKT pathway (PubMed:27445335, PubMed:30667096). Forms a complex with PTPRZ1 and integrin alpha-V/beta-3 (ITGAV:ITGB3) that stimulates endothelial cell migration through SRC dephosphorylation and activation that consequently leads to ITGB3 'Tyr-773' phosphorylation (PubMed:19141530). In adult hippocampus promotes dendritic arborization, spine development, and functional integration and connectivity of newborn granule neurons through ALK by activating AKT signaling pathway (By similarity). Binds GPC2 and chondroitin sulfate proteoglycans (CSPGs) at the neuron surface, leading to abrogation of binding between PTPRS and CSPGs and neurite outgrowth promotion (By similarity). Binds SDC3 and mediates bone formation by recruiting and attaching osteoblasts/osteoblast precursors to the sites for new bone deposition (By similarity). Binds ALK and promotes cell survival and cell proliferation through MAPK pathway activation (PubMed:11278720). Inhibits proliferation and enhances differentiation of neural stem cells by inhibiting FGF2-induced fibroblast growth factor receptor signaling pathway (By similarity). Mediates regulatory mechanisms in normal hemostasis and in hematopoietic regeneration and in maintaining the balance of myeloid and lymphoid regeneration (By similarity). In addition may play a role in the female reproductive system, auditory response and the progesterone-induced decidualization pathway (By similarity).

Subcellular Localization: Secreted .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.