

PTN Polyclonal Antibody

Catalog # AP73702

Product Information

Application	WB, IHC-P
Primary Accession	P21246
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	18942

Additional Information

Gene ID	5764
Other Names	PTN; HBNF1; NEGF1; 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 1; HBNF-1; Osteoblast-specific factor 1; OSF-1
Dilution	WB~~Western Blot: 1/500 - 1/2000. IHC-p: 1:100-1:300. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~Western Blot: 1/500 - 1/2000. IHC-p: 1:100-1:300. ELISA: 1/20000. Not yet tested in other applications.
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

Protein Information

Name	PTN (HGNC:9630)
Synonyms	HBNF1, NEGF1
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, CTNNA1 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 (ITGA5: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).

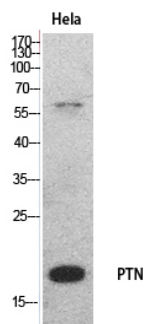
Cellular Location Secreted

Tissue Location Osteoblast and brain..

Background

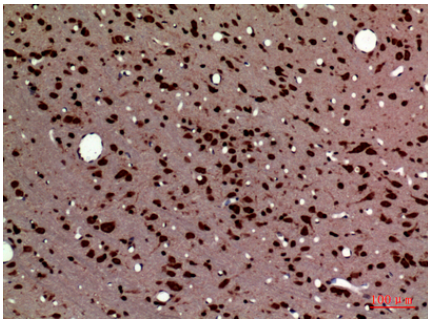
Secreted growth factor that induces neurite outgrowth and which is mitogenic for fibroblasts, epithelial, and endothelial cells (PubMed:[1768439](#), PubMed:[1733956](#)). Binds anaplastic lymphoma kinase (ALK) which induces MAPK pathway activation, an important step in the anti-apoptotic signaling of PTN and regulation of cell proliferation (PubMed:[11278720](#)). Binds to cell-surface target proteins via their chondroitin sulfate groups (PubMed:[26896299](#)). Down-regulates PTPRZ1 activity (PubMed:[16814777](#)).

Images

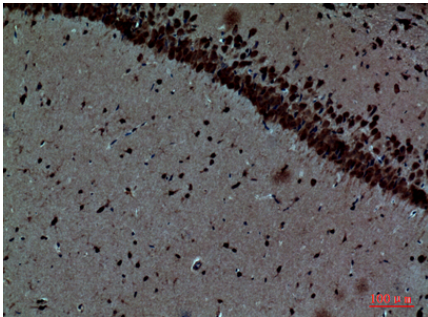
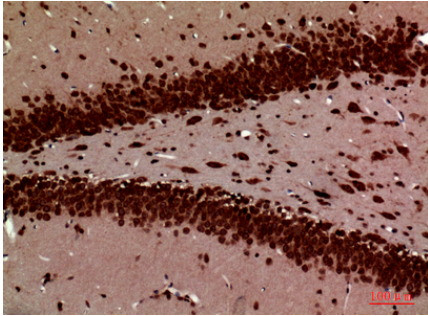


Western Blot analysis of HeLa cells using PTN Polyclonal Antibody.. Secondary antibody was diluted at 1:20000

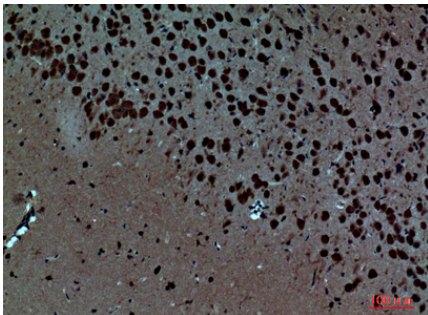
Immunohistochemical analysis of paraffin-embedded rat-brain, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded rat-brain, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded mouse-brain, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded mouse-brain, antibody was diluted at 1:100

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