Recombinant Human Pleiotrophin/PTN  
Catalog Number: 252-PL

DESCRIPTION
Source Spodoptera frugiperda, Sf 21 (baculovirus)-derived  
Gly33-Asp168  
Accession # Q6ICQ5

N-terminal Sequence Analysis Gly33
Predicted Molecular Mass 15.3 kDa

SPECIFICATIONS
SDS-PAGE 18 kDa, reducing conditions
Optimal neurite outgrowth was observed when neurons were plated on 96 well culture plates that had been pre-coated with 100 µL/well of a solution of 3.8 µg/mL rhPTN.
Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.
Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE
Reconstitution Reconstitute at 100 µg/mL in sterile PBS.
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

● 12 months from date of receipt, -20 to -70 °C as supplied.
● 1 month, 2 to 8 °C under sterile conditions after reconstitution.
● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND
PTN was identified independently by several groups as a novel heparin-binding, developmentally regulated cytokine. Depending on the biological activities studied, this protein has variously been referred to as heparin-binding brain mitogen (HBBM), heparin-binding growth factor-8 (HBGF-8), heparin-binding neurite promoting factor, heparin-binding neurotrophic factor (HBNF), heparin-affinity regulatory peptide (HARP), heparin-binding growth-associated molecule (HB-GAM), osteoblast-specific factor (OSF-1), and pleiotrophin. PTN is a highly conserved protein; the amino acid sequences of human, bovine, rat, and mouse PTN share > 98% homology.

PTN is a member of a family of heparin-binding proteins that share sequence, structural, and functional similarity. Other members of this family include midkine (MK), and chicken retinoic acid-induced heparin-binding protein (RI-HB), an avian homologue of MK. The expression of all these cytokines is restricted and highly regulated during development.

PTN can be used as an attachment substrate to stimulate neurite outgrowth in mixed cultures of embryonic rat, mouse or chicken brain cells. Although both natural and recombinant human PTN have been reported to be mitogenic for fibroblasts, endothelial, and epithelial cells, the data are still highly controversial. The insect cell-derived recombinant PTN preparations produced at R&D Systems lack mitogenic activities when tested on various fibroblast, endothelial, and epithelial cell lines. PTN has been shown to transform NIH-3T3 and SW-13 cells, as evidenced by anchorage-independent growth and tumor formation in the nude mouse. These results suggest that, in spite of the conflicting reports of PTN's growth-promoting activity in vitro, PTN may have a role in abnormal cell growth in vivo.