

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Pleiotrophin/PTN in direct ELISAs and Western blots. In direct ELISAs, less than 50% cross-reactivity with recombinant mouse PTN is observed, and less than 1% cross-reactivity with recombinant human Midkine is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human Pleiotrophin/PTN Gly33-Asp168 Accession # P21246
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

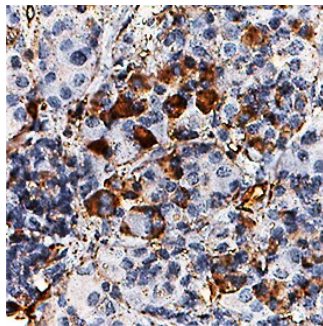
## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human Pleiotrophin/PTN (Catalog # 252-PL)
<b>Immunohistochemistry</b>	3-15 µg/mL	See Below

## DATA

### Immunohistochemistry



**Pleiotrophin/PTN in Human Pituitary.**  
Pleiotrophin/PTN was detected in immersion fixed paraffin-embedded sections of human pituitary using Goat Anti-Human Pleiotrophin/PTN Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-252-PB) at 3 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to plasma membrane and extracellular space. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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. 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*.