

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Pleiotrophin/PTN in direct ELISAs.
Source	Monoclonal Rat IgG _{2A} Clone # 851407
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human Pleiotrophin/PTN Gly33-Asp168 Accession # P21246
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

ELISA Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Pleiotrophin (PTN), also called heparin-binding growth-associated molecule (HB-GAM), heparin-binding neurotrophic factor (HBNF), heparin-affinity regulatory peptide (HARP), or osteoblast-specific factor (OSF-1), is an 18 kDa secreted, strongly heparin-binding, developmentally regulated cytokine (1 - 3). PTN and Midkine share 50% amino acid (aa) sequence identity, share some functions, and constitute a family (1 - 3). The second of two TSP1 domains contains the highest affinity binding site for heparin (4, 5). A 15 kDa form which lacks the C-terminus is mitogenic for glioblastoma cells, while full-length PTN is not (6). PTN is a highly conserved protein; human, mouse, rat, canine, porcine, equine and bovine PTN share 98% aa sequence identity or greater. During development, PTN is involved in development of brain, bone, and organs undergoing branching morphogenesis (3). In the adult, it is induced by PDGF and upregulated in many cancers, hematopoietic stem cells and tissues undergoing remodeling (7 - 10). Cell surface receptors for PTN include Syndecan-3 (which mediates neurite outgrowth) and the receptor tyrosine phosphatase PTPRB, also called RPTPβ/ζ (3, 11 - 13). Heparin binding is necessary for engaging these receptors (7, 8). PTN causes PTPRB dimerization and inactivates its phosphatase activity, which allows increased tyrosine phosphorylation of its substrates (12 - 14). One such substrate is the WNT pathway molecule β-catenin, allowing crosstalk of PTN with WNTs (12). PTN activation of the receptor ALK (anaplastic lymphoma kinase) is indirect through PTPRB, and mediates mitogenic, transforming and angiogenic activities of PTN (2, 5, 6, 13). Increased expression of PTN is correlated with neuronal development or stresses such as brain ischemia and Parkinson's disease (2, 3, 7, 8). Both PTN and Midkine have demonstrated bactericidal activity, but only in the absence of heparin (15).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.