

Human Pleiotrophin / PTN / HB-GAM Protein



Sino Biological
Biological Solution Specialist

Catalog Number: 10288-HNAB

General Information

Gene Name Synonym:

HARP; HBGF8; HBNF; NEGF1

Protein Construction:

A DNA sequence encoding the mature form of human PTN (NP_002816.1) (Met1-Asp168) was expressed.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Bio Activity:

Measured by its binding ability in a functional ELISA. Immobilized human PTN (Cat:10288-HNAB) at 10 µg/ml (100 µl/well) can bind rat SDC1-Fc (Cat:80344-R02H), The EC₅₀ of rat SDC1-Fc (Cat:80344-R02H) is 0.35-0.81 µg/ml.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human PTN consists of 136 amino acids and predicts a molecular mass of 15.3 KDa. It migrates as an approximately 19 KDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 1M NaCl, pH 8.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

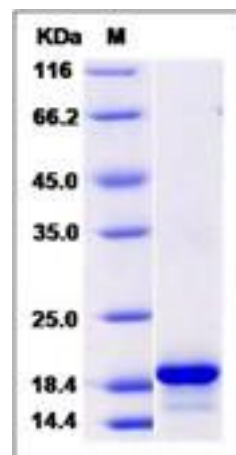
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

HB-GAM belongs to the pleiotrophin family. During embryonic and early postnatal development, HB-GAM is expressed in the central and peripheral nervous system and also in several non-neural tissues, notably lung, kidney, gut and bone. While in the adult central nervous system, it is expressed in an activity-dependent manner in the hippocampus where it can suppress long term potentiation induction. HB-GAM has a low expression in other areas of the adult brain, but it can be induced by ischemic insults, or targeted neuronal damaged in the entorhinal cortex or in the substantia nigra pars compacta. It is structurally related to midkine and retinoic acid induced heparin-binding protein and has a high affinity for heparin. HB-GAM 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. It also functions as a secreted growth factor and induces neurite outgrowth and which is mitogenic for fibroblasts, epithelial, and endothelial cells.

References

- 1.Vanderwinden JM, *et al.* (1992) Cellular distribution of the new growth factor pleiotrophin (HB-GAM) mRNA in developing and adult rat tissues. *Anat Embryol.* 186(4):387-406.
- 2.Lauri SE, *et al.* (1996) Activity-induced enhancement of HB-GAM expression in rat hippocampal slices. *Neuroreport.* 7(10):1670-4.
- 3.Pavlov I, *et al.* (2002) Role of heparin-binding growth-associated molecule (HB-GAM) in hippocampal LTP and spatial learning revealed by studies on overexpressing and knockout mice. *Mol Cell Neurosci.* 20(2):330-42.

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