

Human ACP1 / LMW-PTP Protein (GST Tag)

Catalog Number: 10957-H09E



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

HAAP

Protein Construction:

A DNA sequence encoding human ACP1 (AAI06012.1) (Met 1-His 158) was fused with the GST tag at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 88 % as determined by SDS-PAGE

Bio Activity:

Measured by its ability to cleave a substrate, pNitrophenyl phosphate (pNPP). The specific activity is >65,000 pmol/min/μg.

Endotoxin:

Please contact us for more information.

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 ACP1/GST chimera consists of 384 amino acids and predicts a molecular mass of 44.3 kDa. The apparent molecular mass of rh ACP1 is approximately 40 kDa in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM Tris, 150mM 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:

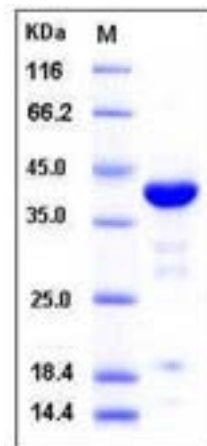
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

The low molecular weight phosphotyrosine phosphatase (LMW-PTP), also known as Acid phosphatase 1 (ACP1), belongs to the low molecular weight phosphotyrosine protein phosphatase family. These enzymes are involved in the regulation of important physiological functions, including stress resistance and synthesis of the polysaccharide capsule. ACP1/LMW-PTP is an enzyme involved in platelet-derived growth factor-induced mitogenesis and cytoskeleton rearrangement. LMW-PTP is able to specifically bind and dephosphorylate activated PDGF receptor, thus modulating PDGF-induced mitogenesis. In vitro, LMW-PTP was found to efficiently dephosphorylate activated FcγRIIA and LAT, but not Syk or phospholipase Cγ2. The overexpression of LMW-PTP inhibited activation of Syk downstream of FcγRIIA and reduced intracellular Ca²⁺ mobilization. It has been demonstrated that LMW-PTP is responsible for FcγRIIA dephosphorylation, and is implicated in the down-regulation of cell activation mediated by this ITAM-bearing immunoreceptor. In addition, ACP1 is a highly polymorphic phosphatase that is especially abundant in the central nervous system and is known to be involved in several signal transduction pathways.

References

1. Cirri P, *et al.* (1998) Low molecular weight protein-tyrosine phosphatase tyrosine phosphorylation by c-Src during platelet-derived growth factor-induced mitogenesis correlates with its subcellular targeting. *J Biol Chem.* 273(49): 32522-7.
2. Chiarugi P, *et al.* (2002) Insight into the role of low molecular weight phosphotyrosine phosphatase (LMW-PTP) on platelet-derived growth factor receptor (PDGF-r) signaling. LMW-PTP controls PDGF-r kinase activity through TYR-857 dephosphorylation. *J Biol Chem.* 277(40): 37331-8.
3. Bottini N, *et al.* (2002) Convulsive disorder and the genetics of signal transduction; a study of a low molecular weight protein tyrosine phosphatase in a pediatric sample. *Neurosci Lett.* 333(3): 159-62.

Manufactured By Sino Biological Inc., FOR RESEARCH USE ONLY. NOT FOR USE IN HUMANS.

For US Customer: Fax: 267-657-0217 • Tel: 215-583-7898

Global Customer: Fax :+86-10-5862-8288 • Tel:+86-400-890-9989 • <http://www.sinobiological.com>