



# Recombinant Protein Technical Manual

## Recombinant Human ACP1/LMW-PTP Protein (GST Tag)(Active)

RPES4857

### Product Data:

**Product SKU:** RPES4857

**Size:** 20µg

**Species:** Human

**Expression host:** E. coli

**Uniprot:** AAI06012.1

### Protein Information:

**Molecular Mass:** 44.3 kDa

**AP Molecular Mass:** 40 kDa

**Tag:** N-GST

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

**Purity:** > 88 % as determined by reducing SDS-PAGE.

**Endotoxin:** Please contact us for more information.

**Storage:** Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from sterile 50mM Tris, 150mM NaCl, pH 8.0

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

**Synonyms:** HAAP; Low Molecular Weight Phosphotyrosine Protein Phosphatase; LMW-PTP; LMW-PTPase; Adipocyte Acid Phosphatase; Low Molecular Weight Cytosolic Acid Phosphatase; Red Cell Acid Phosphatase 1; ACP1

## Immunogen Information:

**Sequence:** Met 1-His 158

## Background:

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 and is 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 Ca<sup>2+</sup> 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.