

Recombinant Human PTN2 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50818

Size: 10ug, 100ug

Protein Name: Tyrosine-protein phosphatase non-receptor type 2 (EC 3.1.3.48) (T-cell protein-tyrosine phosphatase) (TCPTP)

Synonym: PTPN2, PTPT

UniProt ID: P17706

UniProt Link: www.uniprot.org/uniprotkb/P17706/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 415 AA

Molecular Weight: 48 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPTTIEREFEELDTQRRWQPLYLEIRNESHDPYHRVAKFPENRNRNRYRDVSPYDHSRVKLQNAEN
DYINASLVDIEEAQRSYILTQGGLPNTCCHFWMVWQQKTKAVVMLNRIVEKESVKCAQYWPTDDQ
EMLFKETGFSVKLLSEDEVKSYYTVHLLQLENINSGETRTISHFYTTWPDFGVPESPASFLNFLFKVR
ESGSLNPDHGPVAVIHCSAGIGRSGTFSLVDTCLVLMKGGDINIKQVLLNMRKYRMGLIQTPDQLRFS
YMAIIEGAKCIKGDSSIQRWKELSKEDLSPAFDHSPNKIMTEKYNGNRIGLEEEKLTGDRCTGLSSK
MQDTMEENSESALRKRIREDRKATTAQKVQQMKQRLNENERKRKRWLYWQPILTKMGFMSVILVG
AFVGWTLFFQQNAL

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Tyrosine-protein phosphatase non-receptor type 2 (EC 3.1.3.48) (T-cell protein-tyrosine phosphatase) (TCPTP) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Non-receptor type tyrosine-specific phosphatase that dephosphorylates receptor protein tyrosine kinases including INSR, EGFR, CSF1R, PDGFR. Also dephosphorylates non-receptor protein tyrosine kinases like JAK1, JAK2, JAK3, Src family kinases, STAT1, STAT3 and STAT6 either in the nucleus or the cytoplasm. Negatively regulates numerous signaling pathways and biological processes like hematopoiesis, inflammatory response, cell proliferation and differentiation, and glucose homeostasis. Plays a multifaceted and important role in the development of the immune system. Functions in T-cell receptor signaling through dephosphorylation of FYN and LCK to control T-cells differentiation and activation. Dephosphorylates CSF1R, negatively regulating its downstream signaling and macrophage differentiation. Negatively regulates cytokine (IL2/interleukin-2 and interferon)-mediated signaling through dephosphorylation of the cytoplasmic kinases JAK1, JAK3 and their substrate STAT1, that propagate signaling downstream of the cytokine receptors. Also regulates the IL6/interleukin-6 and IL4/interleukin-4 cytokine signaling through dephosphorylation of STAT3 and STAT6 respectively. In addition to the immune system, it is involved in anchorage-dependent, negative regulation of EGF-stimulated cell growth. Activated by the integrin ITGA1/ITGB1, it dephosphorylates EGFR and negatively regulates EGF signaling. Dephosphorylates PDGFRB and negatively regulates platelet-derived growth factor receptor-beta signaling pathway and therefore cell proliferation. Negatively regulates tumor necrosis factor-mediated signaling downstream via MAPK through SRC dephosphorylation. May also regulate the hepatocyte growth factor receptor signaling pathway through dephosphorylation of the hepatocyte growth factor receptor MET. Also plays an important role in glucose homeostasis. For instance, negatively regulates the insulin receptor signaling pathway through the dephosphorylation of INSR and control gluconeogenesis and liver glucose production through negative regulation of the IL6 signaling pathways. May also bind DNA.

Subcellular Localization: [Isoform 1]: Endoplasmic reticulum . Endoplasmic reticulum-Golgi intermediate compartment . Note=Targeted to the endoplasmic reticulum by its C-terminal hydrophobic region.; [Isoform 2]: Nucleus. Cytoplasm. Cell membrane. Note=Predominantly localizes to chromatin (By similarity). Able to shuttle between the nucleus and the cytoplasm and to dephosphorylate plasma membrane receptors (PubMed:9488479). Recruited by activated ITGA1 at the plasma membrane.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.