

TCPTP Protein, Human (sf9, His-GST)

Cat. No.:	HY-P76104
Synonyms:	Tyrosine-protein phosphatase non-receptor type 2; TCPTP; PTPN2; PTPT
Species:	Human
Source:	Sf9 insect cells
Accession:	P17706 (M1-N314)
Gene ID:	5771
Molecular Weight:	Approximately 60 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

TCPTP, a non-receptor type tyrosine-specific phosphatase, acts as a crucial regulator by dephosphorylating various receptor and non-receptor protein tyrosine kinases, including INSR, EGFR, CSF1R, PDGFR, JAK1, JAK2, JAK3, Src family kinases, STAT1, STAT3, and STAT6, either in the nucleus or the cytoplasm. This phosphatase exerts negative control over diverse signaling pathways and biological processes such as hematopoiesis, inflammatory response, cell proliferation and differentiation, and glucose homeostasis. In the immune system, TCPTP plays a multifaceted role, influencing T-cell receptor signaling by dephosphorylating FYN and LCK to regulate T-cell differentiation and activation. Additionally, it negatively modulates cytokine-mediated signaling, including IL2, interferon, IL6, and IL4 pathways. Beyond immune regulation, TCPTP participates in anchorage-dependent, negative regulation of EGF-stimulated cell growth and PDGF receptor-beta signaling, thus influencing cell proliferation. Moreover, it plays a vital role in glucose homeostasis, negatively regulating the insulin receptor signaling pathway and controlling gluconeogenesis and liver glucose production through the IL6 signaling pathway. TCPTP's broad impact underscores its significance in diverse cellular processes, and it may also have DNA binding capabilities.

Caution: Product has not been fully validated for medical applications. For research use only.

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