

TCPTP Protein, Mouse (sf9, His)

Cat. No.:	HY-P76669
Synonyms:	Tyrosine-protein phosphatase non-receptor type 2; MPTP; PTPN2
Species:	Mouse
Source:	Sf9 insect cells
Accession:	Q06180 (S2-N314)
Gene ID:	19255
Molecular Weight:	Approximately 42 kDa

PROPERTIES

Biological Activity	Measured by its ability to dephosphorylate a phosphotyrosine residue in an EGF receptor 988-998 phosphopeptide substrate and the specific activity is > 15 nmoles/min/μg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM Tris, 500 mM NaCl, pH 8.0, 20% Glycerol, 0.1 mM TCEP. 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, exerts its regulatory influence by dephosphorylating a spectrum of proteins involved in various signaling pathways. This includes receptor protein tyrosine kinases like INSR, EGFR, CSF1R, and PDGFR, as well as non-receptor protein tyrosine kinases such as JAK1, JAK2, JAK3, Src family kinases, STAT1, STAT3, and STAT6. Operating both in the nucleus and cytoplasm, TCPTP negatively modulates crucial biological processes, spanning hematopoiesis, inflammatory response, cell proliferation, and differentiation, as well as glucose homeostasis. It plays a pivotal role in immune system development, impacting T-cell receptor signaling, macrophage differentiation, and cytokine-mediated pathways. Additionally, TCPTP participates in the negative regulation of growth factor signaling, exemplified by its role in anchorage-dependent control of EGF-stimulated cell growth. Activated by integrin ITGA1/ITGB1, TCPTP dephosphorylates EGFR, PDGFRB, and SRC, exerting regulatory effects on their respective signaling pathways. Notably, TCPTP extends its influence to glucose homeostasis by negatively regulating insulin receptor signaling and controlling gluconeogenesis. Moreover, it may exhibit DNA-binding capabilities.

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

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