Data Sheet (Cat.No.TMPY-03484)

TargetMol

TCPTP Protein, Human, Recombinant

General Information

Synonyms:	TCPTP;protein tyrosine phosphatase, non-receptor type 2;PTPT;TC-PTP;TCELLPTP;PTN2
Protein Construction:	A DNA sequence encoding the human PTPN2 (P17706-1) (Met 1-Asn 314) was expressed and purified with two additional amino acids (Gly & Pro) at the N-terminus. Predicted N terminal: Gly
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P17706-1
Molecular Weight:	36.8 kDa (predicted); 37 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to dephosphorylate a phosphotyrosine residue in an EGF receptor 988-998 phosphopeptide substrate. The specific activity is > 30 μmoles/min/mg.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, pH 8.0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Tyrosine-protein phosphatase non-receptor type 2, also known as T-cell protein-tyrosine phosphatase, PTPN2 and PTPT, is a cytoplasm protein that belongs to the protein-tyrosine phosphatase family and Non-receptor class 1 subfamily. Members of the protein tyrosine phosphatase (PTP) family share a highly conserved catalytic motif, which is essential for the catalytic activity. TC-PTP / PTPN2 is a cytosolic tyrosine phosphatase that functions as a

negative regulator of a variety of tyrosine kinases and other signaling proteins. The expression of TC-PTP / PTPN2 plays a role of tumor suppressor and may modulate response to treatment. PTPs are known to be signaling molecules that regulate a variety of cellular processes including cell growth, differentiation, mitotic cycle, and oncogenic transformation. Epidermal growth factor receptor and the adaptor protein Shc were reported to be substrates of this PTP, which suggested the roles in growth factor mediated cell signaling. TC-PTP / PTPN2 is an enzyme that is essential for the proper functioning of the immune system and that participates in the control of cell proliferation, and inflammation. TC-PTP / PTPN2 was identified as a negative regulator of NUP214-ABL1 kinase activity.

Reference

Cool D., et al.,(1989), cDNA isolated from a human T-cell library encodes a member of the protein-tyrosine-phosphatase family. Proc. Natl. Acad. Sci. U.S.A. 86:5257-5261.

Ota T., et al., (2004), Complete sequencing and characterization of 21,243 full-length human cDNAs.Nat. Genet. 36:40-45.

Nusbaum C., et al.,(2005), DNA sequence and analysis of human chromosome 18.Nature 437:551-555.