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ProductInformation

MONOCLONAL ANTI-T CELL PROTEIN TYROSINE PHOSPHATASE
Clone CF4-1D
Purified Mouse Immunoglobulin

Product Number **P0732**

Product Description

Monoclonal Anti-T Cell Protein Tyrosine Phosphatase (TCPTP) (mouse IgG2aκ isotype) is derived from the CF4-1D hybridoma produced by the fusion of SP2/0 myeloma cells and splenocytes from an immunized mouse. Recombinant TCPTP was used as immunogen. The antibody is purified using Protein A or Protein G.

Monoclonal Anti-TCPTP detects TCPTP (48 kDa) in human tissues by immunoblotting and immunoprecipitation. This antibody is not reactive in mouse tissues.

Protein phosphorylation and dephosphorylation are central mechanisms that mediate signal transduction events involved in a wide range of cellular processes. Protein phosphatases are considered to play a crucial role in the regulation of protein phosphorylation by reversing the action of protein kinases. Protein phosphatases are present in all eukaryotic cells and regulate several cellular processes. Among them are cell-cycle progression, transcriptional regulation, cell growth, differentiation and apoptosis. The protein phosphatases can be divided into two main groups: protein tyrosine phosphatases (PTPs) and protein serine/threonine phosphatases (PPs) which remove phosphate from proteins/peptides containing phosphotyrosine (pTyr) or phosphoserine/ phosphothreonine (pSer/pThr), respectively An additional group consists of dual specificity pTyr and pSer/pThr phosphatases, an example of which is the MAP Kinase Phosphatase family.
Of special importance among the phosphatases, is the role of the PTPs in controlling cell growth, differentiation and oncogenesis. Several of the PTPs are known to control the function of growth factor receptors, many of which are tyrosine kinases encoded by oncogenes. PTPs can be further subdivided into receptor transmembrane-type PTPs and non-receptor, intracellular PTPs. The receptor PTPs (e.g. LAR, CD45, PTP α, β, δ, μ, κ, etc.) contain a general structure of membrane receptor with an extracellular domain, a single transmembrane domain and one or two tandem repeats of a conserved PTP catalytic domain (250 amino acid residues). The extracellular domain may contain functional domains such as IgG-like and fibronectin type III (Fn-III) repeats. The non-receptor intracellular PTPs (e.g. PTP1B, cdc25, SH-PTP1, SH-PTP2, MEG, PTP-Bas, etc.) contain a conserved PTP catalytic domain (250 amino acid residues) and additional domains such as SH2 domain. The phosphatases can be further subdivided on the basis of their cellular localization, requirement for Ca^{2+} or Mg^{2+}, and sensitivity to specific inhibitors.

The T cell PTP cDNA clone was isolated from a human peripheral T cell library using probes to the conserved PTP domain which encoded a protein with 65% identity to the placental PTP1B.[4] While this protein differs in amino acid composition, it is very similar to PTP1B in its hydrophobicity[5] and is known to be present in other cell types as well. Although its function is still largely unknown, studies have demonstrated that a truncated form, overexpressed in BHK cells results in a greatly reduced cellular growth rate.[6]

Reagents

Anti-TCPTP is supplied as 100 μg of purified, lyophilized antibody with 100 μg of BSA.

Storage/Stability

Store at 2-8°C. Do not freeze. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.
After reconstitution, store at 2-8°C with the addition of 15 mM sodium azide, or freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in a "frost-free" freezer is not recommended.

Reconstitution

Resuspend the lyophilized antibody with sterile phosphate buffered saline (PBS), pH 7.4 or sterile 20 mM Tris-saline (20 mM Tris containing 0.15 M NaCl), pH 7.4 to a final concentration of 100 μg/ml.

Lyophilized antibodies should be resuspended at 4°C with occasional gentle mixing for at least two hours.

Product Profile

Recommended working dilutions are 1-5 µg/ml for immunoblotting and 1-2 µg/sample for immunoprecipitation.

In order to obtain best results and assay sensitivity in different techniques and preparations we recommend determining optimum working dilutions by titration assay.

References

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