ProductInformation

MONOCLONAL ANTI-PROTEIN TYROSINE PHOSPHATASE μ (PTP μ)
Clone SBK10
Purifed Mouse Immunoglobulin

Product Number **P 8984**

Product Description

Monoclonal Anti-Protein Tyrosine Phosphatase μ (PTP μ) (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a peptide corresponding to amino acid residues 42-60 of PTP μ. The antibody is purified from tissue culture supernatant using immobilized Protein G.

Monoclonal Anti-Protein Tyrosine Phosphatase μ (PTP μ) recognizes PTP μ isoforms in all mammalian species tested by immunoblotting and immunoprecipitation.

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 such as cell-cycle progression, transcription, 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. PTP-PEST, 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 the 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.

PTP μ is composed of an extracellular segment containing a MAM domain, an immunoglobulin domain,four fibronectin type III repeats, a transmembrane segment, and two intracellular PTP domains. PTP μ is known to bind homophilically, i.e., PTP μ on one cell interacts with PTP μ on another cell.

Reagents

Monoclonal Anti-Protein Tyrosine Phosphatase μ (PTP μ) is supplied as 100 μg of Protein G isolated antibody in phosphate buffered saline with 0.08% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

Antibodies should be stored at –20 °C. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1 to 10 µg/ml for immunoblotting using peroxidase conjugated goat anti-mouse IgG and chemiluminescent detection.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, we recommend determining optimal working dilutions by titration test.

References

1. Cho, H. et al., Biochemistry, **30**, 6210 (1991).
2. Ng, D.H. et al., J. Immunol. Methods, **179**, 177 (1994).
3. Gjorloff-Wingren, A. et al., Eur. J. Immunol., **30(8)**, 2412 (2000).

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