



MONOCLONAL ANTI-PROTEIN TYROSINE PHOSPHATASE 1B

Clone **FG6-1G**,

Purified Mouse Immunoglobulin

Product Number **P0857**

Product Description

Monoclonal Anti-Protein Tyrosine Phosphatase 1B (PTP1B) (mouse IgG2aκ isotype) is derived from the FG6-1G hybridoma produced by the fusion of SP2/0 myeloma cells and splenocytes from an immunized mouse. Recombinant PTP1B was used as immunogen. The antibody is purified using either protein A or protein G affinity chromatography.

Monoclonal Anti-PTP1B recognizes an epitope in the catalytic domain of human, rat, hamster and avian PTP1B (48 kDa) and is weakly reactive with murine PTP1B and human T cell PTP. The antibody may be used for immunoblotting, immunoprecipitation and immunofluorescence.

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

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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.

Reagents

Monoclonal Anti-PTP1B is supplied as 0.1 mg/ml of purified antibody in 0.05 M sodium phosphate buffer containing 0.2% gelatin and 0.1% 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

Store at 2-8°C. Do Not Freeze. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

The recommended working concentration is 1-5 $\mu\text{g/ml}$ for immunoblotting, 1-2 $\mu\text{g/sample}$ for immunoprecipitation and 1-5 $\mu\text{g/ml}$ for immunofluorescence.

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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