

Background

PTP1B is a nonreceptor type protein tyrosine phosphatase that has essential roles in insulin and leptin signaling, as well as important functions in growth factor and integrin signaling. The structure of PTP1B includes a conserved phosphatase domain, C-terminal hydrophobic residues for targeting to the cytoplasmic face of the endoplasmic reticulum, and proline-rich regions characteristic of SH3 domain binding motifs. PTP1B can interact with N-Cadherin and dephosphorylate β -catenin associated with cadherin complexes. PTP1B also interacts with Insulin and EGF receptors, and undergoes phosphorylation after receptor stimulation. Tyrosine phosphorylation at Tyr-66, Tyr-152, and Tyr-153 occurs after insulin receptor activation, and tyrosine phosphorylation of Tyr-152 may be required for interactions with N-Cadherin. In addition, Akt can phosphorylate Ser-50 and this phosphorylation can reduce PTP1B activity.

Background References

Bandyopadhyay, D. et al. (1997) J. Biol. Chem. 272(3):1639.
Lingamanaidu, V. et al. (2001) Molecular Endocrinology 15(10):1768.
Rhee, J. et al. (2001) J. Biol. Chem. 276(9):6640.

Applications

Blocking 1:1000
ELISA 50 ng/well

End user should determine optimal dilution for their particular applications and experiments.
Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

Specificity

This peptide is specifically recognized by PTP1B (Tyr-152) phospho-specific antibody (PP2391) in ELISA, and has been shown to block the reactivity of PP2391 in Western blot and is recommended for blocking in immunocytochemistry.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

Peptide Sequence

Phospho-PTP1B (Tyr-152) synthetic peptide corresponds to amino acids surrounding Tyr-152 in human PTP1B. This sequence has significant homology to the conserved site in rat and mouse PTP1B, and has homology to conserved sites in TC-PTP and MPTP, but not other protein tyrosine phosphatase family members.

Buffer and Storage

Blocking Peptide is supplied in 50µl phosphate-buffered saline and 0.05% sodium azide.
Store at -20°C. Stable for 1 year.

Related Products

PM2341 PTP1B (C-terminal region) Mouse Monoclonal
PP2411 PTP1B (Ser-50), phospho-specific Rabbit Polyclonal
PP2391 PTP1B (Tyr-152), phospho-specific Rabbit Polyclonal
PK6290 PTP1B Phospho-Regulation Antibody Sampler Kit

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