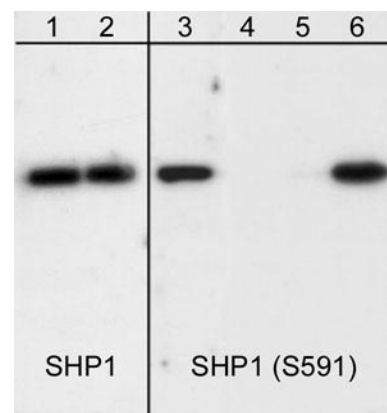


Background

SHP1 (PTP1C, SH-PTP1, or HCP) is a protein-tyrosine phosphatase (PTP) involved in cell migration, cell proliferation, and immune cell function. This phosphatase contains two N-terminal SH2 domains and a C-terminal phosphatase domain. SHP1 associates with a variety of cytokine and growth factor receptors and regulates signal transduction through dephosphorylation of these receptors or their downstream effectors. Downstream of receptor activation, SHP1 regulates the transcriptional activity stimulated by JAK/Stat and MAPK pathways. SHP1 activity is regulated by both tyrosine and serine phosphorylation. Phosphorylation of Tyr-536 and Tyr-564 stimulates phosphatase activity and promotes interaction with Grb-2. Serine phosphorylation at Ser-591 is mediated by PKCα and leads to inhibition of phosphatase activity. Thus, phosphorylation at tyrosine relative to serine residues may be regulated by different cell signaling pathways to control SHP1 activity.

Background References

Zhang, J. et al. (2000) Semin. Immunol. 12:361.
Zhang, Z. et al. (2003) J. Biol. Chem. 278(7):4668.
Jones, M.L. et al. (2004) J. Biol. Chem. 279(39):40475.



Western blot analysis of human Jurkat cells treated with pervanadate (1 mM) for 30 min. The blot was exposed to lambda phosphatase (lanes 2 & 4) then probed with anti-SHP1 (C-terminal) antibody (lanes 1 & 2) or anti-SHP1 (Ser-591) antibody (lanes 3-6). The SHP1 (Ser-591) antibody was used in the presence of phospho-SHP1 (Ser-591) peptide (lane 5) or a non-specific phospho-serine peptide (lane 6).

Applications

WB 1:500
ELISA 1:2000
IP 1:100
ICC 1:100

Species Reactivity

Hu, Rt, Ms

Isotype: IgG1

Specificity

The antibody detects a 68 kDa* protein in human A431 and Jurkat cells, and does not cross-react with SHP2.

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

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.

Immunogen

Uniprot ID: P29350

Clone (M160) was generated from a recombinant protein containing amino acids in the C-terminal region of human SHP1. This sequence is highly conserved in rat and mouse SHP1.

Buffer and Storage

Mouse monoclonal antibody purified with protein A chromatography is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Related Products

PP2351 PTP1B (a.a.146-157) Rabbit Polyclonal
PP2411 PTP1B (Ser-50), phospho-specific Rabbit Polyclonal
PP2391 PTP1B (Tyr-152), phospho-specific Rabbit Polyclonal
SP1571 SHP1 (Tyr-536), phospho-specific Rabbit Polyclonal
SP1531 SHP1 (Ser-591), phospho-specific Rabbit Polyclonal

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