

# SH-PTP1 (D-11): sc-7289

## BACKGROUND

The steady state of protein tyrosyl phosphorylation in cells is regulated by the opposing action of tyrosine kinases and protein tyrosine phosphatases (PTPs). Several groups have independently identified a non-transmembrane PTP, designated SH-PTP1 (also known as PTP1C, HCP and SHP), which is primarily expressed in hematopoietic cells and characterized by the presence of two SH2 domains N-terminal to the PTP domain. SH2 domains generally mediate the association of regulatory molecules with specific phosphotyrosine-containing sites on autophosphorylated receptors, thereby controlling the initial interaction of receptors with these substrates. A second and much more widely expressed PTP with SH2 domains, SH-PTP2 (also designated PTP1D and Syp), has been identified. Strong sequence similarity between SH-PTP2 and the *Drosophila* gene corkscrew (CSW) and their similar patterns of expression suggest that SH-PTP2 is the human corkscrew homolog.

## REFERENCES

1. Chernoff, J., et al. 1990. Cloning of a cDNA for a major human protein tyrosine phosphatase. *Proc. Natl. Acad. Sci. USA* 87: 2735-2739.
2. Shen, S.H., et al. 1991. A protein tyrosine phosphatase with sequence similarity to the SH2 domain of the protein tyrosine kinases. *Nature* 352: 736-739.
3. Plutzky, J., et al. 1992. Isolation of a Src homology 2-containing tyrosine phosphatase. *Proc. Natl. Acad. Sci. USA* 89: 1123-1127.

## CHROMOSOMAL LOCATION

Genetic locus: PTPN6 (human) mapping to 12p13.31; Ptpn6 (mouse) mapping to 6 F2.

## SOURCE

SH-PTP1 (D-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 570-595 at the C-terminus of SH-PTP1 of human origin (differs from corresponding mouse sequence by a single amino acid).

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SH-PTP1 (D-11) is available conjugated to agarose (sc-7289 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7289 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-7289 PE), fluorescein (sc-7289 FITC) or Alexa Fluor® 488 (sc-7289 AF488) or Alexa Fluor® 647 (sc-7289 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-7289 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

SH-PTP1 (D-11) is recommended for detection of SH-PTP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

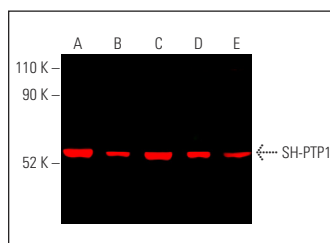
SH-PTP1 (D-11) is also recommended for detection of SH-PTP1 in additional species, including canine and porcine.

Suitable for use as control antibody for SH-PTP1 siRNA (h): sc-29478, SH-PTP1 siRNA (m): sc-29479, SH-PTP1 siRNA (r): sc-270044, SH-PTP1 shRNA Plasmid (h): sc-29478-SH, SH-PTP1 shRNA Plasmid (m): sc-29479-SH, SH-PTP1 shRNA Plasmid (r): sc-270044-SH, SH-PTP1 shRNA (h) Lentiviral Particles: sc-29478-V, SH-PTP1 shRNA (m) Lentiviral Particles: sc-29479-V and SH-PTP1 shRNA (r) Lentiviral Particles: sc-270044-V.

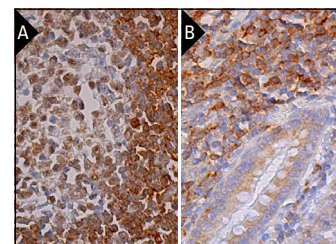
Molecular Weight of SH-PTP1: 68 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HEL 92.1.7 cell lysate: sc-2270 or TF-1 cell lysate: sc-2412.

## DATA



SH-PTP1 (D-11): sc-7289. Near-Infrared western blot analysis of SH-PTP1 expression in HL-60 (A), U-937 (B), HEL 92.1.7 (C), TF-1 (D) and CCRF-CEM (E) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG<sub>3</sub> BP-CFL 790: sc-533678.



SH-PTP1 (D-11): sc-7289. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal center and cytoplasmic staining of cells in non-germinal center (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of lymphoid cells (B).

## SELECT PRODUCT CITATIONS

1. Oka, T., et al. 2001. Reduction of hematopoietic cell-specific tyrosine phosphatase SHP-1 gene expression in natural killer cell lymphoma and various types of lymphomas/leukemias: combination analysis with cDNA expression array and tissue microarray. *Am. J. Pathol.* 159: 1495-1505.
2. Xu, X., et al. 2020. PD-1 and BTLA regulate T cell signaling differentially and only partially through SHP1 and SHP2. *J. Cell Biol.* 219: e201905085.
3. Okubo, K., et al. 2021. Inhibitory affinity modulation of FcγRIIA ligand binding by glycosphingolipids by inside-out signaling. *Cell Rep.* 35: 109142.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.