PTP-H1 (H-6): sc-515181

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

The phosphorylation of proteins at tyrosine residues has long been recognized as an important regulatory component of signal transduction. This is a reversible process, involving both enzymes that phosphorylate proteins on tyrosine residues as well as a rapidly expanding family of protein tyrosine phosphatases. These latter enzymes bear little resemblance to either the protein serine and protein threonine phosphatases or to the acid and alkaline phosphatases. In most tissues, the major PTPase is a vanadate- and molybdate-sensitive protein. PTP-H1 shares homology with the cytoskeletal-associated proteins band 4.1, Ezrin, and Talin and has been shown to contain a PDZ and band 4.1 domain. These domains are responsible for targeting proteins to the cytoskeleton-membrane interface, as well as mediating protein-protein interactions, recognizing C-terminal valine residues and binding to other PDZ domains. Overexpression of PTP-H1 may reverse transformation induced by oncogenic protein-tyrosine kinases, such as the members of the Src family.

CHROMOSOMAL LOCATION

Genetic locus: PTPN3 (human) mapping to 9q31.3.

SOURCE

PTP-H1 (H-6) is a mouse monoclonal antibody raised against amino acids 371-510 mapping within an internal region of PTP-H1 of human origin.

PRODUCT

Each vial contains 200 µg IgG$_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PTP-H1 (H-6) is available conjugated to agarose (sc-515181 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515181 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515181 PE), fluorescein (sc-515181 FITC), Alexa Fluor® 488 (sc-515181 AF488), Alexa Fluor® 546 (sc-515181 AF546), Alexa Fluor® 594 (sc-515181 AF594) or Alexa Fluor® 647 (sc-515181 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515181 AF680) or Alexa Fluor® 790 (sc-515181 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

PTP-H1 (H-6) is recommended for detection of PTP-H1 of human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PTP-H1 siRNA (h): sc-44053, PTP-H1 shRNA Plasmid (h): sc-44053-SH and PTP-H1 shRNA (h) Lentiviral Particles: sc-44053-V.

Molecular Weight of PTP-H1: 104 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, MIA PaCa-2 cell lysate: sc-2285 or PANC-1 whole cell lysate: sc-364380.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA
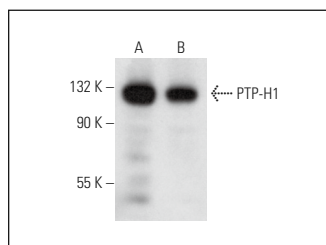
PTP-H1 (H-6): sc-515181. Western blot analysis of PTP-H1 expression in HEK293 (**A**) and PANC-1 (**B**) whole cell lysates.
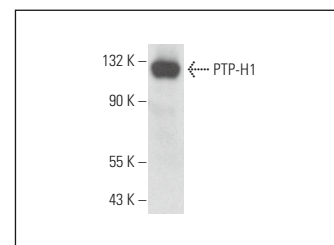
PTP-H1 (H-6): sc-515181. Western blot analysis of PTP-H1 expression in MIA PaCa-2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Diluvio, G., et al. 2018. NOTCH3 inactivation increases triple negative breast cancer sensitivity to gefitinib by promoting EGFR tyrosine dephosphorylation and its intracellular arrest. Oncogenesis 7: 42.

2. Wang, Y., et al. 2018. High expression of PTPN3 predicts progression and unfavorable prognosis of glioblastoma. Med. Sci. Monit. 24: 7556-7562.

3. Sun, R., et al. 2019. PTPN3 suppresses the proliferation and correlates with favorable prognosis of perihilar cholangiocarcinoma by inhibiting Akt phosphorylation. Biomed. Pharmacother. 121: 109583.

4. Yuan, B., et al. 2019. PTPN3 acts as a tumor suppressor and boosts TGF-β signaling independent of its phosphatase activity. EMBO J. 38: e99945.

5. Koga, S., et al. 2021. PTPN3 is a potential target for a new cancer immunotherapy that has a dual effect of T cell activation and direct cancer inhibition in lung neuroendocrine tumor. Transl. Oncol. 14: 101152.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.