

PTP1B (C-19): sc-1719

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. On the basis of sequence analysis, PTP1B expressed in human placenta exhibits similarities both with the common leukocyte antigen (CD45) and with LAR, a homolog of the neural adhesion molecule (NCAM). PTPase 1B is synthesized as a 435 amino acid precursor protein which is cleaved to generate the active 321 amino acid enzyme.

REFERENCES

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- Moria, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.
- Gould, K.L., et al. 1989. Tyrosine phosphorylation of the fission yeast Cdc2 protein kinase regulates entry into mitosis. *Nature* 342: 39-45.
- Lau, K.H.W., et al. 1989. Phosphotyrosyl protein phosphatases. *Biochem. J.* 257: 23-36.
- Charbonneau, H., et al. 1989. Human placenta protein-tyrosine-phosphatase: amino acid sequence and relationship to a family of receptor-like proteins. *Proc. Natl. Acad. Sci. USA* 86: 5252-5256.
- Chernoff, J., et al. 1990. Cloning of a cDNA for a major human protein-tyrosine-phosphatase. *Proc. Natl. Acad. Sci. USA* 87: 2735-2739.

CHROMOSOMAL LOCATION

Genetic locus: PTPN1 (human) mapping to 20q13.13.

SOURCE

PTP1B (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PTP1B of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1719 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PTP1B (C-19) is recommended for detection of PTP1B of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 PTP1B siRNA (h): sc-36328, PTP1B shRNA Plasmid (h): sc-36328-SH and PTP1B shRNA (h) Lentiviral Particles: sc-36328-V.

Molecular Weight of PTP1B: 50 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, CCRF-HSB-2 cell lysate: sc-2265 or JAR cell lysate: sc-2276.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Kuchay, S.M., et al. 2007. Double knockouts reveal that protein tyrosine phosphatase 1B is a physiological target of calpain-1 in platelets. *Mol. Cell. Biol.* 27: 6038-6052.
- Pauli, J.R., et al. 2008. Acute physical exercise reverses S-nitrosation of the Insulin receptor, Insulin receptor substrate 1 and protein kinase B/Akt in diet-induced obese Wistar rats. *J. Physiol.* 586: 659-671.

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 or our catalog for detailed protocols and support products.



Try **PTP1B (D-4): sc-133259** or **PTP1B (H-9): sc-133258**, our highly recommended monoclonal alternatives to PTP1B (C-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **PTP1B (D-4): sc-133259**.