

# PTP1B (B-9): sc-133115

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

## REFERENCES

1. Hunter, T., et al. 1985. Protein-tyrosine kinases. *Annu. Rev. Biochem.* 54: 897-930.
2. Tonks, N.K., et al. 1988. Purification of the major protein-tyrosine-phosphatases of human placenta. *J. Biol. Chem.* 263: 6722-6730.
3. Strueli, M., et al. 1988. A new member of the immunoglobulin superfamily that has a cytoplasmic region homologous to the leukocyte common antigen. *J. Exp. Med.* 168: 1523-1530.
4. Moria, A.O., et al. 1989. Reversible tyrosine phosphorylation of Cdc2: dephosphorylation accompanies activation during entry into mitosis. *Cell* 58: 193-203.
5. Gould, K.L., et al. 1989. Tyrosine phosphorylation of the fission yeast Cdc2 protein kinase regulates entry into mitosis. *Nature* 342: 39-45.
6. Lau, K.H.W., et al. 1989. Phosphotyrosyl protein phosphatases. *Biochem. J.* 257: 23-36.
7. 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

PTP1B (B-9) is a mouse monoclonal antibody raised against amino acids 301-435 mapping at the C-terminus of PTP1B (protein tyrosine phosphatase) of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

PTP1B (B-9) is recommended for detection of PTP1B 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 PTP1B siRNA (h): sc-36328, PTP1B shRNA Plasmid (h): sc-36328-SH and PTP1B shRNA (h) Lentiviral Particles: sc-36328-V.

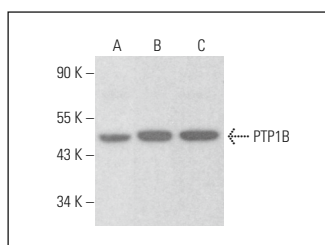
Molecular Weight of PTP1B: 50 kDa.

Positive Controls: PTP1B (h): 293 Lysate: sc-111053, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

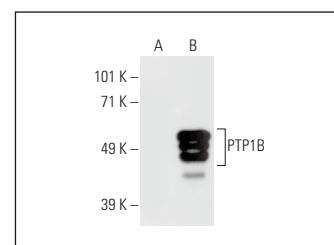
## RECOMMENDED SUPPORT REAGENTS

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



PTP1B (B-9): sc-133115. Western blot analysis of PTP1B expression in Hep G2 (A), HeLa (B) and MCF7 (C) whole cell lysates.



PTP1B (B-9): sc-133115. Western blot analysis of PTP1B expression in non-transfected: sc-110760 (A) and human PTP1B transfected: sc-111053 (B) 293 whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **PTP1B (D-4): sc-133259** for PTP1B antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.