

PTP1B (3A7): sc-56960

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

- Hunter, T., et al. 1985. Protein-tyrosine kinases. *Annu. Rev. Biochem.* 54: 897-930.
- Tonks, N.K., et al. 1988. Purification of the major protein-tyrosine-phosphatases of human placenta. *J. Biol. Chem.* 263: 6722-6730.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

PTP1B (3A7) is a mouse monoclonal antibody raised against recombinant PTP1B of human origin.

PRODUCT

Each vial contains IgG_{2a} in 100 µl of PBS with < 0.1% sodium azide, 50% glycerol and < 0.1% stabilizer protein.

STORAGE

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

APPLICATIONS

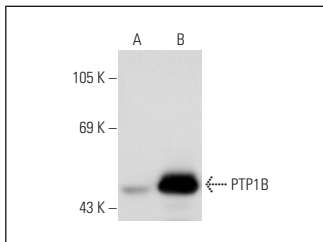
PTP1B (3A7) is recommended for detection of PTP1B of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)].

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.

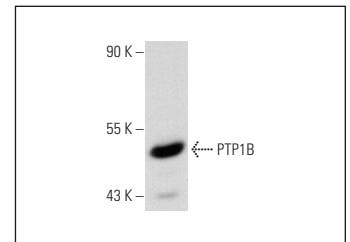
Molecular Weight of PTP1B: 50 kDa.

Positive Controls: PTP1B (h): 293 Lysate: sc-111053, Hep G2 cell lysate: sc-2227 or HL-60 whole cell lysate: sc-2209.

DATA



PTP1B (3A7): sc-56960. Western blot analysis of PTP1B expression in non-transfected: sc-110760 (A) and human PTP1B transfected: sc-111053 (B) 293 whole cell lysates.



PTP1B (3A7): sc-56960. Western blot analysis of PTP1B expression in HL-60 whole cell lysate.

SELECT PRODUCT CITATIONS

- Guadalupe-Grau, A., et al. 2014. Influence of age on leptin induced skeletal muscle signalling. *Acta Physiol.* 211: 214-228.

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.



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.