SANTA CRUZ BIOTECHNOLOGY, INC.

PTP1B (N-19): sc-1718

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: PTPN1 (human) mapping to 20q13.13; Ptpn1 (mouse) mapping to 2 H3.

SOURCE

PTP1B (N-19) is available as either goat (sc-1718) or rabbit (sc-1718-R) affinity purified polyclonal antibody raised against a peptide mapping at the N-terminus of PTP1B of human origin.

PRODUCT

Each vial contains either 100 µg (sc-1718) or 200 µg (sc-1718-R) IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1718 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PTP1B (N-19) is recommended for detection of PTP1B 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PTP1B (N-19) is also recommended for detection of PTP1B in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PTP1B siRNA (h): sc-36328, PTP1B siRNA (m): sc-36329, PTP1B shRNA Plasmid (h): sc-36328-SH, PTP1B shRNA Plasmid (m): sc-36329-SH, PTP1B shRNA (h) Lentiviral Particles: sc-36328-V and PTP1B shRNA (m) Lentiviral Particles: sc-36329-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.

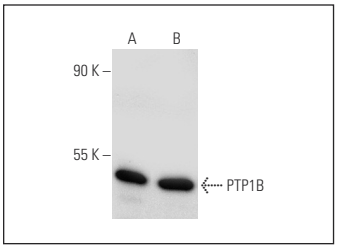
RESEARCH USE

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

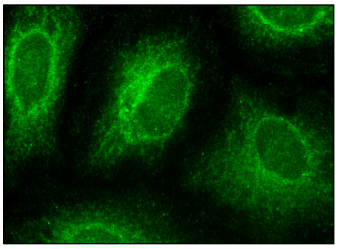
STORAGE

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

DATA



PTP1B (N-19): sc-1718. Western blot analysis of PTP1B expression in HL-60 (**A**) and CCRF-HSB-2 (**B**) whole cell lysates.



PTP1B (N-19): sc-1718. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Pasquet, J.M., et al. 1998. Microvesicle release is associated with extensive protein tyrosine dephosphorylation in platelets stimulated by A23187 or a mixture of Thrombin and collagen. Biochem. J. 333: 591-599.
2. Joliot, V., et al. 2006. Constitutive STAT5 activation specifically cooperates with the loss of p53 function in B-cell lymphomagenesis. Oncogene 25: 4573-4584.
3. Lam, N.T., et al. 2006. Leptin resistance following over-expression of protein tyrosine phosphatase 1B in liver. J. Mol. Endocrinol. 36: 163-174.
4. 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.
5. Martins, M.R., et al. 2008. Early overnutrition impairs Insulin signaling in the heart of adult Swiss mice. J. Endocrinol. 198: 591-598.
6. Rapizzi, E., et al. 2009. Sphingosine 1-phosphate increases glucose uptake through *trans*-activation of Insulin receptor. Cell. Mol. Life Sci. 66: 3207-3218.
7. Bobrich, M., et al. 2011. PTPIP51 interaction with PTP1B and 14-3-3β in adipose tissue of Insulin-resistant mice. Int. J. Obes. 35: 1385-1394.
8. Traves, P.G., et al. 2014. Pivotal role of protein tyrosine phosphatase 1B (PTP1B) in the macrophage response to pro-inflammatory and anti-inflammatory challenge. Cell Death Dis. 5: e1125.
9. Pardo, V., et al. 2015. Opposite cross-talk by oleate and palmitate on Insulin signaling in hepatocytes through macrophage activation. J. Biol. Chem. 290: 11663-11677.