SANTA CRUZ BIOTECHNOLOGY, INC.

PTPμ (SBK10): sc-65228

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Protein tyrosine phosphatases, or PTPs, are type I transmembrane proteins, membrane associated proteins or proteins localized in nuclei. Examples of transmembrane PTPs are LAR, PTPα, PTPβ, PTPγ, PTPδ, PTPε, PTPζ, PTPκ and PTPμ. Transmembrane PTPs play diverse roles during development and in adult tissues. Immunodepletion studies have suggested LAR to be a regulator of Insulin receptor phosphorylation. PTPα activity is increased twofold in response to phorbol ester stimulation, resulting in serine phosphorylation either directly or indirectly by members of the PKC family. Overexpression of v-H-Ras and Neu, but not Myc or Int2, in mammary tumors has been shown to induce PTPε expression. An alternative splicing event leads to a nervous tissue-specific chondroitin sulfate proteoglycan called phosphacan, which represents the amino-terminal portion of PTPζ. PTPκ and PTPμ share a conserved amino-terminal 160 amino acid MAM domain which facilitates homophilic binding. PTPμ localizes to points of cell contact and may be involved in regulating the assembly and disassembly of cadherin/catenin complexes *in vivo*.

REFERENCES

1. Ahmad, F., et al. 1995. Increased abundance of the receptor-type protein-tyrosine phosphatase LAR accounts for the elevated Insulin receptor dephosphorylating activity in adipose tissue of obese human subjects. J. Clin. Invest. 95: 2806-2812.
2. den Hertog, J., et al. 1995. Stimulation of receptor protein-tyrosine phosphatase α activity and phosphorylation by phorbol ester. Cell Growth Differ. 6: 303-307.
3. Brady-Kalnay, S.M., et al. 1995. Receptor protein tyrosine phosphatase PTPμ associates with cadherins and catenins *in vivo*. J. Cell Biol. 130: 977-986.
4. Zondag, G.C., et al. 1995. Homophilic interactions mediated by receptor tyrosine phosphatases μ and κ. A critical role for the novel extracellular MAM domain. J. Biol. Chem. 270: 14247-14250.

CHROMOSOMAL LOCATION

Genetic locus: PTPRM (human) mapping to 18p11.23; Ptprm (mouse) mapping to 17 E1.1.

SOURCE

PTPμ (SBK10) is a mouse monoclonal antibody raised against amino acids 42-60 of PTPμ of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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

PTPμ (SBK10) is recommended for detection of PTPμ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

PTPμ (SBK10) is also recommended for detection of PTPμ in additional species, including bovine.

Suitable for use as control antibody for PTPμ siRNA (h): sc-44055, PTPμ siRNA (m): sc-45947, PTPμ shRNA Plasmid (h): sc-44055-SH, PTPμ shRNA Plasmid (m): sc-45947-SH, PTPμ shRNA (h) Lentiviral Particles: sc-44055-V and PTPμ shRNA (m) Lentiviral Particles: sc-45947-V.

Molecular Weight of PTPμ precursor: 200 kDa.

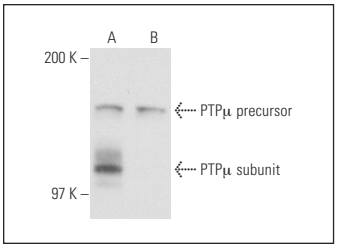
Molecular Weight of PTPμ subunits: 100 kDa.

Positive Controls: A549 cell lysate: sc-2413, SK-N-SH cell lysate: sc-2410 or T98G cell lysate: sc-2294.

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).

DATA



PTPμ (SBK10): sc-65228. Western blot analysis of PTPμ expression in SK-N-SH (**A**) and T98G (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lee, S.W., et al. 2011 Angiopoietin-1 protects heart against ischemia/reperfusion injury through VE-cadherin dephosphorylation and myocardiac integrin-β1/ERK/caspase-9 phosphorylation cascade. Mol. Med. 17: 1095-1106.
2. Jiang, H., et al. 2015. Endothelial tyrosine kinase receptor B prevents VE-cadherin cleavage and protects against atherosclerotic lesion development in ApoE$^{-/-}$ mice. Oncotarget 6: 30640-30649.

RESEARCH USE

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