SANTA CRUZ BIOTECHNOLOGY, INC.

PTPζ (122.2): sc-33664

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, PTPμ, PTPκ and PTPζ. 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 PTPμ. PTPκ and PTPζ share a conserved amino terminal 160 amino acid MAM domain which facilitates homophilic binding. PTPζ localizes to points of cell contact and may be involved in regulating the assembly and disassembly of cadherin/catenin complexes *in vivo*.

CHROMOSOMAL LOCATION

Genetic locus: PTPRZ1 (human) mapping to 7q31.32; Ptprz1 (mouse) mapping to 6 A3.1.

SOURCE

PTPζ (122.2) is a mouse monoclonal antibody immunized with purified proteoglycan fraction of infant brains of rat origin.

PRODUCT

Each vial contains 200 µg IgM 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

PTPζ (122.2) is recommended for detection of PTPζ 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PTPζ siRNA (h): sc-44048, PTPζ siRNA (m): sc-44970, PTPζ shRNA Plasmid (h): sc-44048-SH, PTPζ shRNA Plasmid (m): sc-44970-SH, PTPζ shRNA (h) Lentiviral Particles: sc-44048-V and PTPζ shRNA (m) Lentiviral Particles: sc-44970-V.

Molecular Weight of PTPζ short form: 190 kDa.

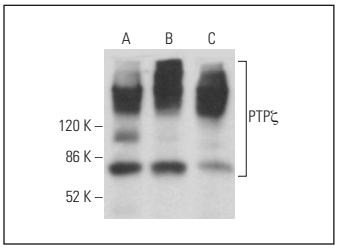
Molecular Weight of glycosylated PTPζ form: 350-400/90 kDa.

Positive Controls: mouse brain extract: sc-2253, SK-N-SH cell lysate: sc-2410 or MOLT-4 cell lysate: sc-2233.

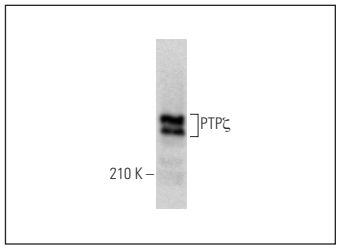
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PTPζ (122.2): sc-33664. Western blot analysis of PTPζ expression in mouse brain (**A**), mouse postnatal brain (**B**) and rat hippocampus (**C**) tissue extracts.



PTPζ (122.2): sc-33664. Western blot analysis of PTPζ expression in MOLT-4 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Kaspiris, A., et al. 2016. Effects of mechanical loading on the expression of pleiotrophin and its receptor protein tyrosine phosphatase β/ζ in a rat spinal deformity model. Cytokine 78: 7-15.
2. Liu, S., et al. 2018. Knockdown of pleiotrophin increases the risk of preeclampsia following vitrified-thawed embryo transfer. Int. J. Oncol. 53: 1847-1856.
3. Cijsouw, T., et al. 2018. Mapping the proteome of the synaptic cleft through proximity labeling reveals new cleft proteins. Proteomes 6: 48.
4. Bhaduri, A., et al. 2020. Outer radial glia-like cancer stem cells contribute to heterogeneity of glioblastoma. Cell Stem Cell 26: 48-63.e6.
5. Yamanoi, Y., et al. 2020. Soluble protein tyrosine phosphatase receptor type Z (PTPRZ) in cerebrospinal fluid is a potential diagnostic marker for glioma. Neurooncol. Adv. 2: vdaa055.
6. Delgado, R.N., et al. 2022. Individual human cortical progenitors can produce excitatory and inhibitory neurons. Nature 601: 397-403.

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.