

PTP ψ (L-20): sc-67804

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, PTP α , PTP β , PTP γ , PTP δ , PTP ϵ , PTP ζ , PTP κ , PTP μ and PTP ψ . Transmembrane PTPs play diverse roles in a variety of cellular processes during development and in adult tissues. PTP ψ , also known as PTPRU, FMI, PCP-2, PTP-J, PTPRO, PTP-PI, PTPPSI or GLEPP1, is a receptor-type PTP containing a transmembrane region, two intracellular tandem catalytic domains, and an extracellular region with Ig-like and Fibronectin type III-like repeats and a MAM (meprin-A5 antigen-PTP μ) domain. PTP ψ localizes to adheren junctions and is capable of binding and dephosphorylating β -catenin thereby functioning as a negative regulator of β -catenin signaling. In addition, PTP ψ may function as a tumor suppressor, as its expression is silenced in a variety of tumors via methylation of its promoter.

REFERENCES

1. Sommer, L., et al. 1997. RPTP δ and the novel protein tyrosine phosphatase RPTP ψ are expressed in restricted regions of the developing central nervous system. *Dev. Dyn.* 208: 48-61.
2. Avraham, S., et al. 1997. Characterization and chromosomal localization of PTPRO, a novel receptor protein tyrosine phosphatase, expressed in hematopoietic stem cells. *Gene* 204: 5-16.
3. Taniguchi, Y., et al. 1999. The receptor protein tyrosine phosphatase, PTPRO, is upregulated during megakaryocyte differentiation and is associated with the c-Kit receptor. *Blood* 94: 539-549.
4. McArdle, L., et al. 2001. Protein tyrosine phosphatase genes downregulated in melanoma. *J. Invest. Dermatol.* 117: 1255-1260.
5. Motiwala, T., et al. 2004. Protein tyrosine phosphatase receptor-type O (PTPRO) exhibits characteristics of a candidate tumor suppressor in human lung cancer. *Proc. Natl. Acad. Sci. USA* 101: 13844-13849.
6. Mori, Y., et al. 2004. Identification of genes uniquely involved in frequent microsatellite instability colon carcinogenesis by expression profiling combined with epigenetic scanning. *Cancer Res.* 64: 2434-2438.
7. Jacob, S.T., et al. 2005. Epigenetic regulation of protein tyrosine phosphatases: potential molecular targets for cancer therapy. *Cancer Gene Ther.* 12: 665-672.
8. Yan, H.X., et al. 2006. Protein-tyrosine phosphatase PCP-2 inhibits β -catenin signaling and increases E-cadherin-dependent cell adhesion. *J. Biol. Chem.* 281: 15423-15433.

CHROMOSOMAL LOCATION

Genetic locus: PTPRU (human) mapping to 1p35.3; Ptpu (mouse) mapping to 4 D2.3.

SOURCE

PTP ψ (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of PTP ψ of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-67804 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PTP ψ (L-20) is recommended for detection of PTP ψ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PTP ψ (L-20) is also recommended for detection of PTP ψ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PTP ψ siRNA (h): sc-62910, PTP ψ siRNA (m): sc-62911, PTP ψ shRNA Plasmid (h): sc-62910-SH, PTP ψ shRNA Plasmid (m): sc-62911-SH, PTP ψ shRNA (h) Lentiviral Particles: sc-62910-V and PTP ψ shRNA (m) Lentiviral Particles: sc-62911-V.

Molecular Weight of full length PTP ψ : 200 kDa.

Molecular Weight of PTP ψ cleaved extracellular fragment: 100 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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



Try **PTP ψ (E-2): sc-393104**, our highly recommended monoclonal alternative to PTP ψ (L-20).