

PTP ψ (E-2): sc-393104

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, PTP-RO, 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.

CHROMOSOMAL LOCATION

Genetic locus: PTPRU (human) mapping to 1p35.3.

SOURCE

PTP ψ (E-2) is a mouse monoclonal antibody raised against amino acids 1-96 mapping at the N-terminus of PTP ψ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PTP ψ (E-2) is available conjugated to agarose (sc-393104 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393104 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393104 PE), fluorescein (sc-393104 FITC), Alexa Fluor[®] 488 (sc-393104 AF488), Alexa Fluor[®] 546 (sc-393104 AF546), Alexa Fluor[®] 594 (sc-393104 AF594) or Alexa Fluor[®] 647 (sc-393104 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393104 AF680) or Alexa Fluor[®] 790 (sc-393104 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PTP ψ (E-2) is recommended for detection of PTP ψ of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

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

Molecular Weight of full length PTP ψ : 200 kDa.

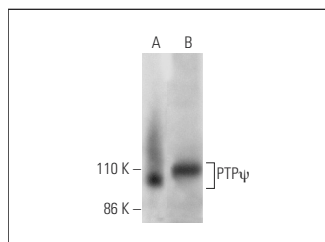
Molecular Weight of cleaved extracellular PTP ψ fragment: 100 kDa.

Positive Controls: human brain hippocampus extract: sc-364375 or human lung extract: sc-363767.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



PTP ψ (E-2): sc-393104. Western blot analysis of PTP ψ expression in human hippocampus (A) and human lung (B) tissue extracts.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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