

## PTP $\sigma$ (C-19): sc-10871

### 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 $\alpha$ , PTP $\beta$ , PTP $\gamma$ , PTP $\delta$ , PTP $\epsilon$ , PTP $\zeta$ , PTP $\kappa$ , PTP $\mu$  and PTP $\sigma$ . Transmembrane PTPs play diverse roles during development and in adult tissues. Immunodepletion studies have suggested LAR to be a regulator of Insulin receptor phosphorylation. PTP $\alpha$  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 PTP $\epsilon$  expression. An alternative splicing event leads to a nervous tissue-specific chondroitin sulfate proteoglycan called phosphacan, which represents the amino-terminal portion of PTP $\zeta$ . PTP $\kappa$  and PTP $\mu$  share a conserved amino terminal 160 amino acid MAM domain which facilitates homophilic binding. PTP $\mu$  localizes to points of cell contact and may be involved in regulating the assembly and disassembly of cadherin/catenin complexes *in vivo*. PTP $\sigma$  contains an extracellular region, a single transmembrane segment and two tandem intracytoplasmic catalytic domains, and thus represents a receptor-type PTP. PTP $\sigma$  may also be involved in the molecular control of adult nerve repair. Four alternatively spliced transcript variants, which encode distinct proteins, have been reported.

### CHROMOSOMAL LOCATION

Genetic locus: PTPRS (human) mapping to 19p13.3; Ptprs (mouse) mapping to 17 D.

### SOURCE

PTP $\sigma$  (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PTP $\sigma$  of human origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-10871 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

PTP $\sigma$  (C-19) is recommended for detection of PTP $\sigma$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

PTP $\sigma$  (C-19) is also recommended for detection of PTP $\sigma$  in additional species, including canine, bovine and porcine.

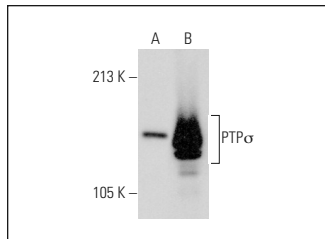
Suitable for use as control antibody for PTP $\sigma$  siRNA (h): sc-44056, PTP $\sigma$  siRNA (m): sc-77403, PTP $\sigma$  shRNA Plasmid (h): sc-44056-SH, PTP $\sigma$  shRNA Plasmid (m): sc-77403-SH, PTP $\sigma$  shRNA (h) Lentiviral Particles: sc-44056-V and PTP $\sigma$  shRNA (m) Lentiviral Particles: sc-77403-V.

Molecular Weight of PTP $\sigma$ : 217 kDa.

### 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 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<sup>™</sup> Mounting Medium: sc-24941.

### DATA



PTP $\sigma$  (C-19): sc-10871. Western blot analysis of PTP $\sigma$  expression in HeLa whole cell lysate (A) and mouse liver tissue extract (B).

### SELECT PRODUCT CITATIONS

- Cote, S., et al. 2005. The survival of IL-6-dependent myeloma cells critically relies on their capability to transit the G<sub>1</sub> to S phase interval of the cell cycle. *Cell. Signal.* 17: 615-624.
- Xie, Y., et al. 2006. Protein-tyrosine phosphatase (PTP) wedge domain peptides: a novel approach for inhibition of PTP function and augmentation of protein-tyrosine kinase function. *J. Biol. Chem.* 281: 16482-16492.
- Gonzalez-Fernandez, L., et al. 2009. Identification of protein tyrosine phosphatases and dual-specificity phosphatases in mammalian spermatozoa and their role in sperm motility and protein tyrosine phosphorylation. *Biol. Reprod.* 80: 1239-1252.

### 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.

**MONOS**  
Satisfaction  
Guaranteed

Try PTP $\sigma$  (SS-8): sc-100419, our highly recommended monoclonal alternative to PTP $\sigma$  (C-19).