

# PCPTP1 (V-15): sc-68115

## BACKGROUND

The protein tyrosine phosphatase (PTP) family of proteins are signaling molecules that regulate processes such as cell growth, cell differentiation, oncogenic transformation and the mitotic cycle. PCPTP1, also known as PTPRR (receptor-type tyrosine-protein phosphatase R), ECPTP, PTPBR7 or PTPRQ, is a 657 amino acid protein that functions to sequester inactive mitogen-activated protein kinases (MAPKs) to the cytoplasm. Expressed primarily in the brain with weaker expression in other parts of the body, PCPTP1 is a receptor-like molecule that is able to dephosphorylate MAPKs, thereby rendering them inactive. Three isoforms of PCPTP1 exist and are designated  $\alpha$ ,  $\beta$  and  $\gamma$ . The  $\alpha$  form is localized to the cell membrane, while the  $\beta$  and  $\gamma$  forms are localized to the perinuclear areas within the cytoplasm.

## REFERENCES

- Shiozuka, K., et al. 1995. Cloning and expression of PCPTP1 encoding protein tyrosine phosphatase. *Gene* 162: 279-284.
- Watanabe, Y., et al. 1998. Cloning of PCPTP1-Ce encoding protein tyrosine phosphatase from the rat cerebellum and its restricted expression in Purkinje cells. *Brain Res. Mol. Brain Res.* 58: 83-94.
- Ogata, M., et al 1999. Inactivation of mitogen-activated protein kinases by a mammalian tyrosine-specific phosphatase, PTPBR7. *Biochem. Biophys. Res. Commun.* 256: 52-56.
- Karim, F.D. and Rubin, G.M. 1999. PTP-ER, a novel tyrosine phosphatase, functions downstream of Ras1 to downregulate MAP kinase during *Drosophila* eye development. *Mol. Cell* 3: 741-750.
- Peuvrel, I., et al. 2002. The microsporidian polar tube: evidence for a third polar tube protein (PTP3) in *Encephalitozoon cuniculi*. *Mol. Biochem. Parasitol.* 122: 69-80.
- Nakamura, F., et al. 2005. Cloning and characterization of the novel chimeric gene TEL/PTPRR in acute myelogenous leukemia with inv(12)(p13q13). *Cancer Res.* 65: 6612-6621.
- Eswaran, J., et al. 2006. Crystal structures and inhibitor identification for PTPN5, PTPRR and PTPN7: a family of human MAPK-specific protein tyrosine phosphatases. *Biochem. J.* 395: 483-491.
- Chirivi, R.G., et al. 2007. Altered MAP kinase phosphorylation and impaired motor coordination in PTPRR deficient mice. *J. Neurochem.* 101: 829-840.

## CHROMOSOMAL LOCATION

Genetic locus: PTPRR (human) mapping to 12q15; Ptprr (mouse) mapping to 10 A2.

## SOURCE

PCPTP1 (V-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of PCPTP1 of human origin.

## STORAGE

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

## 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-68115 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PCPTP1 (V-15) is recommended for detection of PCPTP1 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).

PCPTP1 (V-15) is also recommended for detection of PCPTP1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PCPTP1 siRNA (h): sc-62759, PCPTP1 siRNA (m): sc-62760, PCPTP1 shRNA Plasmid (h): sc-62759-SH, PCPTP1 shRNA Plasmid (m): sc-62760-SH, PCPTP1 shRNA (h) Lentiviral Particles: sc-62759-V and PCPTP1 shRNA (m) Lentiviral Particles: sc-62760-V.

Molecular Weight of PCPTP1: 70 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™ 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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.