

PTPRQ (C-20): sc-32465

BACKGROUND

Protein tyrosine phosphorylation influences cell responses including growth, proliferation, differentiation, migration, metabolism and survival. Tyrosine phosphorylation is a reversible process in balance by the activities of protein tyrosine kinases and protein tyrosine phosphatases (PTP). The PTP superfamily includes transmembrane receptor-like PTPs, cytosolic phosphotyrosine specific PTPs, dual specificity PTPs (DSP), and multiple specificity PTP (MSPs). PTPRQ was first identified as a protein upregulated in rat kidney in response to glomerular nephritis. It displays a very low phosphatase activity against phosphotyrosine, but is active against phosphatidylinositol phosphates, which regulate survival, proliferation and subcellular architecture. PTPRQ has been shown to be the same molecule as the hair-cell antigen (HCA), and is required for the formation of shaft connectors of the hair bundle, the normal maturation of cochlear hair bundles, and the long-term survival of high-frequency auditory hair cells.

REFERENCES

1. Krueger, N.X., et al. 1990. Structural diversity and evolution of human receptor-like protein tyrosine phosphatases. *EMBO J.* 9: 3241-3252.
2. Fischer, E.H., et al. 1991. Protein tyrosine phosphatases: a diverse family of intracellular and transmembrane enzymes. *Science* 253: 401-406.
3. Pan, M.G., et al. 1993. Cloning and expression of two structurally distinct receptor-linked protein tyrosine phosphatases generated by RNA processing from a single gene. *J. Biol. Chem.* 268: 19284-19291.
4. Wright, M.B., et al. 1998. Proliferating and migrating mesangial cells responding to injury express a novel receptor protein tyrosine phosphatase in experimental mesangial. *J. Biol. Chem.* 273: 23929-23937.
5. Goodyear, R.J., et al. 2003. A receptor-like inositol lipid phosphatase is required for the maturation of developing cochlear hair bundles. *J. Neurosci.* 23: 9208-9219.
6. Seifert, R.A., et al. 2003. PTPRQ is a novel phosphatidylinositol phosphatase that can be expressed as a cytoplasmic protein or as a subcellularly localized receptor-like protein. *Exp. Cell Res.* 287: 374-386.
7. Oganessian, A., et al. 2003. Protein tyrosine phosphatase RQ is a phosphatidylinositol phosphatase that can regulate cell survival and proliferation. *Proc. Natl. Acad. Sci. USA* 100: 7563-7568.

CHROMOSOMAL LOCATION

Genetic locus: PTPRQ (human) mapping to 12q21.31; Ptpqr (mouse) mapping to 10 D1.

SOURCE

PTPRQ (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PTPRQ of rat 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 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32465 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PTPRQ (C-20) is recommended for detection of PTPRQ 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).

PTPRQ (C-20) is also recommended for detection of PTPRQ in additional species, including equine, canine and bovine.

Suitable for use as control antibody for PTPRQ siRNA (h): sc-45262, PTPRQ siRNA (m): sc-45263, PTPRQ shRNA Plasmid (h): sc-45262-SH, PTPRQ shRNA Plasmid (m): sc-45263-SH, PTPRQ shRNA (h) Lentiviral Particles: sc-45262-V and PTPRQ shRNA (m) Lentiviral Particles: sc-45263-V.

Molecular Weight of PTPRQ: 275 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 or our catalog for detailed protocols and support products.