

MPZL1 (P-13): sc-160539

BACKGROUND

MPZL1 (myelin protein zero-like 1), also known as PZR, PZR α , PZR β , PZR1 β or MPZL1 β , is a 269 amino acid widely expressed single-pass type I membrane receptor belonging to the myelin PO protein family and the immunoglobulin superfamily. Existing as four alternatively spliced isoforms, MPZL1 participates in signal transduction and cell migration. The activity of MPZL1 in cell migration is dependent on both its immunoreceptor tyrosine inhibitory motif (ITIM) and its association with tyrosine protein phosphatase, src homology phosphatase-2 (SH-PTP2), an essential enzyme involved in hematopoietic, skeletal and vascular development. Containing one Ig-like V-type (immunoglobulin-like) domain, MPZL1 is a major receptor for concanavalin A (conA). MPZL1 is encoded by a gene located on human chromosome 1, which contains approximately 3,000 genes, spans about 260 million base pairs and makes up 8% of the human genome.

REFERENCES

- Zhao, Z.J. and Zhao, R. 1998. Purification and cloning of PZR, a binding protein and putative physiological substrate of tyrosine phosphatase SHP-2. *J. Biol. Chem.* 273: 29367-29372.
- Zhao, R. and Zhao, Z.J. 2000. Dissecting the interaction of SHP-2 with PZR, an immunoglobulin family protein containing immunoreceptor tyrosine-based inhibitory motifs. *J. Biol. Chem.* 275: 5453-5459.
- Tang, D.S., et al. 2000. Cloning of human myelin protein zero-like genes by bioinformatics strategy. *Sheng Wu Hua Xue Yu Sheng Wu Wu Li Xue Bao* 32: 364-368.
- Zhao, R. and Zhao, Z.J. 2003. Identification of a variant form of PZR lacking immunoreceptor tyrosine-based inhibitory motifs. *Biochem. Biophys. Res. Commun.* 303: 1028-1033.
- Zannettino, A.C., et al. 2003. Novel mesenchymal and haematopoietic cell isoforms of the SHP-2 docking receptor, PZR: identification, molecular cloning and effects on cell migration. *Biochem. J.* 370: 537-549.
- He, G., et al. 2006. MPZL1/PZR, a novel candidate predisposing schizophrenia in Han Chinese. *Mol. Psychiatry* 11: 748-751.
- Roubelakis, M.G., et al. 2007. The murine ortholog of the SHP-2 binding molecule, PZR accelerates cell migration on Fibronectin and is expressed in early embryo formation. *J. Cell. Biochem.* 102: 955-969.
- Eminaga, S. and Bennett, A.M. 2008. Noonan syndrome-associated SHP-2/Ptpn11 mutants enhance SIRP- α and PZR tyrosyl phosphorylation and promote adhesion-mediated ERK activation. *J. Biol. Chem.* 283: 15328-15338.
- Conrad, A.H., et al. 2009. Embryonic corneal Schwann cells express some Schwann cell marker mRNAs, but no mature Schwann cell marker proteins. *Invest. Ophthalmol. Vis. Sci.* 50: 4173-4184.

CHROMOSOMAL LOCATION

Genetic locus: MPZL1 (human) mapping to 1q24.2; Mpzl1 (mouse) mapping to 1 H2.3.

RESEARCH USE

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

SOURCE

MPZL1 (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of MPZL1 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-160539 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MPZL1 (P-13) is recommended for detection of MPZL1 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); non cross-reactive with MPZL2 or MPZL3.

MPZL1 (P-13) is also recommended for detection of MPZL1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MPZL1 siRNA (h): sc-88129, MPZL1 siRNA (m): sc-149545, MPZL1 shRNA Plasmid (h): sc-88129-SH, MPZL1 shRNA Plasmid (m): sc-149545-SH, MPZL1 shRNA (h) Lentiviral Particles: sc-88129-V and MPZL1 shRNA (m) Lentiviral Particles: sc-149545-V.

Molecular Weight of hyperphosphorylated MPZL1: 43 kDa.

Molecular Weight of MPZL1 isoforms: 30/21 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or COLO 320DM cell lysate: sc-2226.

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.

PROTOCOLS

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