SANTA CRUZ BIOTECHNOLOGY, INC.

MTMR4 (N-14): sc-51134

BACKGROUND

Myotubularin and the myotubularin-related proteins (MTMR1-9) belong to a highly conserved family of eukaryotic phosphatases. They are protein tyrosine phosphatases that utilize inositol phospholipids, rather than phosphoproteins, as substrates. MTMR family members hydrolyze both phosphatidylinositol 3-phosphate (PtdIns3P) and PtdIns(3,5)P2. MTMR2 interacts with MTMR5, an inactive family member that increases the enzymatic activity of MTMR2 and dictates its subcellular localization. Mutations in MTMR2 cause autosomal recessive Charcot-Marie-Tooth type 4B1 (CMT4B1), which is characterized by reduced nerve conduction velocities, focally folded myelin sheaths and demyelination. MTMR3 and MTMR4 can either interact with each other or self-associate. MTMR6 regulates the activity of the calcium-activated potassium channel 3.1. MTMR9 regulates the activity of MTMR7 and MTMR8.

REFERENCES

1. Laporte, J., et al. 1997. Mutations in the MTM1 gene implicated in X-linked myotubular myopathy. Hum. Mol. Genet. 6: 1505-1511.
2. Blondeau, F., et al. 2000. Myotubularin, a phosphatase deficient in myotubular myopathy, acts on phosphatidylinositol 3-kinase and phosphatidylinositol 3-phosphate pathway. Hum. Mol. Genet. 9: 2223-2229.
3. Kim, S.A., et al. 2003. Regulation of myotubularin-related MTMR2 phosphatidylinositol phosphatase by MTMR5, a catalytically inactive phosphatase. Proc. Natl. Acad. Sci. USA 100: 4492-4497.
4. Mochizuki, Y., et al. 2003. Characterization of myotubularin-related protein 7 and its binding partner, myotubularin-related protein 9. Proc. Natl. Acad. Sci. USA 100: 9768-9773.
5. Srivastava, S., et al. 2005. Phosphatidylinositol 3-phosphate indirectly activates KCa3.1 via 14 amino acids in the carboxy-terminus of KCa3.1. Mol. Biol. Cell. 17: 146-154.
6. Lorenzo, O., et al. 2006. Systematic analysis of myotubularins: heteromeric interactions, subcellular localisation and endosomerelated functions. J. Cell. Sci. 119 (Pt 14): 2953-2959.
7. Berger, P., et al. 2006. Multi-level regulation of myotubularin-related protein-2 phosphatase activity by myotubularin-related protein-13/SET-binding factor-2. Hum. Mol. Genet. 15: 569-579.

CHROMOSOMAL LOCATION

Genetic locus: MTMR4 (human) mapping to 17q22; Mtmr4 (mouse) mapping to 11 C.

SOURCE

MTMR4 (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MTMR4 of human origin.

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-51134 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MTMR4 (N-14) is recommended for detection of MTMR4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

MTMR4 (N-14) is also recommended for detection of MTMR4 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for MTMR4 siRNA (h): sc-61090, MTMR4 siRNA (m): sc-61091, MTMR4 shRNA Plasmid (h): sc-61090-SH, MTMR4 shRNA Plasmid (m): sc-61091-SH, MTMR4 shRNA (h) Lentiviral Particles: sc-61090-V and MTMR4 shRNA (m) Lentiviral Particles: sc-61091-V.

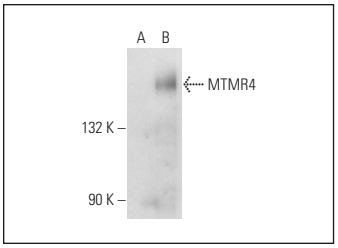
Molecular Weight of MTMR4: 133 kDa.

Positive Controls: MTMR4 (h): 293T Lysate: sc-115138.

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) 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™ Mounting Medium: sc-24941.

DATA



MTMR4 (N-14): sc-51134. Western blot analysis of MTMR4 expression in non-transfected: sc-117752 (**A**) and human MTMR4 transfected: sc-115138 (**B**) 293T whole cell lysates.

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.