

MTMR4 (D-5): sc-373922

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

- Laporte, J., et al. 1997. Mutations in the MTM1 gene implicated in X-linked myotubular myopathy. *Hum. Mol. Genet.* 6: 1505-1511.
- 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.
- 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.
- Mochizuki, Y. and Majerus, P.W. 2003. Characterization of myotubularin-related protein 7 and its binding partner, myotubularin-related protein 9. *Proc. Natl. Acad. Sci. USA* 100: 9768-9773.

CHROMOSOMAL LOCATION

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

SOURCE

MTMR4 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-23 at the N-terminus of MTMR4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MTMR4 (D-5) is available conjugated to agarose (sc-373922 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373922 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373922 PE), fluorescein (sc-373922 FITC), Alexa Fluor® 488 (sc-373922 AF488), Alexa Fluor® 546 (sc-373922 AF546), Alexa Fluor® 594 (sc-373922 AF594) or Alexa Fluor® 647 (sc-373922 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373922 AF680) or Alexa Fluor® 790 (sc-373922 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373922 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MTMR4 (D-5) is recommended for detection of MTMR4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

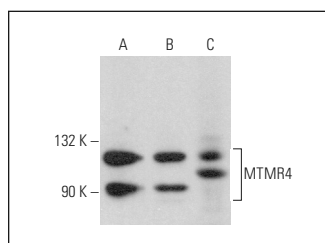
MTMR4 (D-5) is also recommended for detection of MTMR4 in additional species, including canine, bovine, porcine and avian.

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.

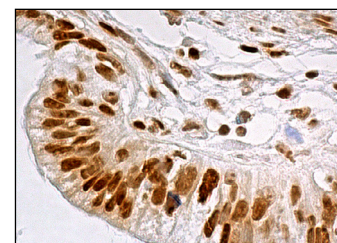
Molecular Weight of MTMR4: 133 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, SH-SY5Y cell lysate: sc-3812 or BE (2)-M17 whole cell lysate: sc-364358.

DATA



MTMR4 (D-5): sc-373922. Western blot analysis of MTMR4 expression in IMR-32 (A), BE (2)-M17 (B) and SH-SY5Y (C) whole cell lysates.



MTMR4 (D-5): sc-373922. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

- Campa, C.C., et al. 2018. Rab11 activity and PtdIns(3)P turnover removes recycling cargo from endosomes. *Nat. Chem. Biol.* 14: 801-810.

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.

PROTOCOLS

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

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