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MTMR2 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP6802a

Specification

MTMR2 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession	Q13614
Other Accession	NP_057240

MTMR2 Antibody (N-term) Blocking Peptide - Additional Information

Gene ID 8898

Other Names
Myotubularin-related protein 2, Phosphatidylinositol-3, 5-bisphosphate 3-phosphatase, Phosphatidylinositol-3-phosphate phosphatase, MTMR2, KIAA1073

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP6802a was selected from the N-term region of human MTMR2 . A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

MTMR2 Antibody (N-term) Blocking Peptide - Protein Information

Name MTMR2 (HGNC:7450)

Function
Lipid phosphatase that specifically dephosphorylates the D-3 position of phosphatidylinositol 3-phosphate and phosphatidylinositol 3,5-bisphosphate, generating phosphatidylinositol and phosphatidylinositol 5-phosphate (PubMed:11733541, PubMed:12668758, PubMed:14690594, PubMed:21372139). Regulates the level of these phosphoinositides critical for various biological processes including autophagy initiation and autophagosome maturation (PubMed:35580604).

Cellular Location
Cytoplasm. Early endosome membrane; Peripheral membrane protein. Cytoplasm, perinuclear region. Cell projection, axon {ECO:0000250|UniProtKB:Q9Z2D1}. Endosome membrane {ECO:0000250|UniProtKB:Q9Z2D1}; Peripheral membrane protein. Note=Partly associated with membranes (PubMed:12668758, PubMed:15998640, PubMed:21372139). Localizes to vacuoles in hypo- osmotic conditions (By similarity). {ECO:0000250|UniProtKB:Q9Z2D1, ECO:0000269|PubMed:12668758, ECO:0000269|PubMed:15998640, ECO:0000269|PubMed:21372139}

MTMR2 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

MTMR2 Antibody (N-term) Blocking Peptide - Images

MTMR2 Antibody (N-term) Blocking Peptide - Background

The MTMR2 gene encodes a member of the myotubularin family, characterized by the presence of a phosphatase domain. Mutations in the myotubularin gene (MTM) cause X-linked myotubular myopathy. Northern blot analysis reveals that the 4-kb MTMR2 mRNA is expressed ubiquitously. The mouse Mtmr2 gene encodes a 643-amino acid protein that shares 97% sequence identity with the human protein. Mouse Mtmr2 dephosphorylates phosphatidylinositol 3-phosphate (PI3P) and phosphatidylinositol 3,5-bisphosphate (PI3,5P2), most effectively at neutral pH. This is distinct from the activity of myotubularin, which only acts on PI3P. Analysis of MTMR2 mutations associated with Charcot-Marie-Tooth disease type 4B (CMT4B1) show markedly diminished phosphatase activity, suggesting that this activity is crucial for the proper functioning of peripheral nerves. MTMR2 mutations may lead to malfunction of neural membrane recycling, membrane trafficking, and endo- and exocytic processes. Loss-of-function mutations in MTMR2 are associated with the CMT4B phenotype. MTMR2 interacts with MTMR5, and mutations in the coiled-coil domain of either MTMR2 or MTMR5 abolish this interaction. Through this interaction, MTMR5 promotes enzymatic activity of MTMR2 and prescribe subcellular localization.

MTMR2 Antibody (N-term) Blocking Peptide - References

Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).Kikuno, R., et al., DNA Res. 6(3):197-205 (1999).Laporte, J., et al., Hum. Mol. Genet. 7(11):1703-1712 (1998).Laporte, J., et al., Nat. Genet. 13(2):175-182 (1996).