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MTMR4 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6804a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9NYA4
Other Accession	NM_004687
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	133353
Antigen Region	1155-1187

Additional Information

Gene ID	9110
Other Names	Myotubularin-related protein 4, FYVE domain-containing dual specificity protein phosphatase 2, FYVE-DSP2, Zinc finger FYVE domain-containing protein 11, MTMR4, KIAA0647, ZFYVE11
Target/Specificity	This MTMR4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1155-1187 amino acids from the C-terminal region of human MTMR4.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MTMR4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MTMR4 (HGNC:7452)
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:11302699, PubMed:16787938, PubMed:20736309, PubMed:27625994, PubMed:29962048, PubMed:30944173). Decreases the levels of phosphatidylinositol 3-phosphate, a phospholipid found in cell membranes where it acts as key regulator of both cell signaling and intracellular membrane traffic, in a subset of endosomal membranes to negatively regulate both endocytic recycling and trafficking and/or maturation of endosomes toward lysosomes (PubMed:16787938, PubMed:20736309, PubMed:29962048). Through phosphatidylinositol 3-phosphate turnover in phagosome membranes regulates phagocytosis and phagosome maturation (PubMed:31543504). By decreasing phosphatidylinositol 3-monophosphate (PI3P) levels in immune cells it can also regulate the innate immune response (PubMed:30944173). Beside its lipid phosphatase activity, can also function as a molecular adapter to regulate midbody abscission during mitotic cytokinesis (PubMed:25659891). Can also negatively regulate TGF-beta and BMP signaling through Smad proteins dephosphorylation and retention in endosomes (PubMed:20061380, PubMed:23150675).

Cellular Location

Early endosome membrane; Peripheral membrane protein. Recycling endosome membrane; Peripheral membrane protein. Late endosome membrane; Peripheral membrane protein. Cytoplasmic vesicle, phagosome membrane; Peripheral membrane protein

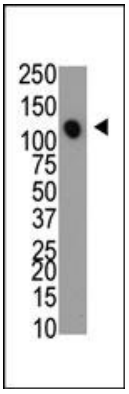
Tissue Location

Expressed in brain, heart, kidney, spleen, liver, colon, testis, muscle, placenta, thyroid gland, pancreas, ovary, prostate, skin, peripheral blood, and bone marrow

Background

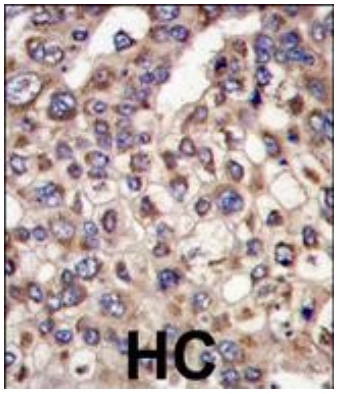
MTMR, a member of the myotubularin family, encodes an intracellular protein of 1,195 amino acids, and shares approximately 47% sequence identity with MTMR3, spiking to over 70% identity in the catalytic domain and the double zinc finger (FYVE) motif. PCR analysis detects expression of MTMR4 in all human tissues examined except lung, small intestine, stomach, salivary gland, adrenal gland, and uterus. Subcellular localization of MTMR4 in transfected HeLa cells showed a perinuclear distribution, similar to that seen with MTMR3. MTMR4 dephosphorylates para-nitrophenylphosphate and phosphatidylinositol 3-phosphate.

Images



The anti-MTMR4 Pab (Cat. #AP6804a) is used in Western blot to detect MTMR4 in mouse heart cell lysate.

Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with MTMR4 antibody (C-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for



immunohistochemistry; clinical relevance has not been evaluated.

Citations

- PtdIns3P phosphatases MTMR3 and MTMR4 negatively regulate innate immune responses to DNA through modulating STING trafficking.
- MTMR4 attenuates transforming growth factor beta (TGFbeta) signaling by dephosphorylating R-Smads in endosomes.
- The inositol phosphatase MTMR4 is a novel target of the ubiquitin ligase Nedd4.
- Myotubularin-related protein 4 (MTMR4) attenuates BMP/Dpp signaling by dephosphorylation of Smad proteins.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.