

# 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

HostRabbitClonalityPolyclonalIsotypeRabbit IgGCalculated MW133353Antigen Region1155-1187

### **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

 $phosphatidy linositol\ 3- phosphate\ and\ phosphatidy linositol\ 3, 5-bisphosphate,$ 

generating phosphatidylinositol and phosphatidylinositol 5-phosphate

(PubMed: 11302699, PubMed: 16787938, PubMed: 20736309, PubMed:<u>27625994</u>, PubMed:<u>29962048</u>, PubMed:<u>30944173</u>). 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

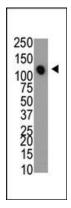
**Tissue Location** 

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.

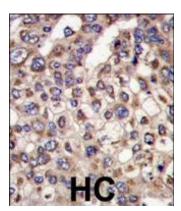
## **Images**



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.
- Myotubularin-related protein 4 (MTMR4) attenuates BMP/Dpp signaling by dephosphorylation of Smad proteins.
- 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.

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