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MTM1 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6809a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q13496
Other Accession	A6QLT4
Reactivity	Human
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	69932
Antigen Region	1-30

Additional Information

Gene ID	4534
Other Names	Myotubularin, Phosphatidylinositol-3, 5-bisphosphate 3-phosphatase, Phosphatidylinositol-3-phosphate phosphatase, MTM1, CG2
Target/Specificity	This MTM1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human MTM1.
Dilution	WB~~1:500 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	MTM1 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MTM1 (HGNC:7448)
Synonyms	CG2
Function	Lipid phosphatase which dephosphorylates phosphatidylinositol

3-monophosphate (PI3P) and phosphatidylinositol 3,5-bisphosphate (PI(3,5)P2) (PubMed:10900271, PubMed:11001925, PubMed:12646134, PubMed:14722070). Has also been shown to dephosphorylate phosphotyrosine- and phosphoserine-containing peptides (PubMed:9537414). Negatively regulates EGFR degradation through regulation of EGFR trafficking from the late endosome to the lysosome (PubMed:14722070). Plays a role in vacuolar formation and morphology. Regulates desmin intermediate filament assembly and architecture (PubMed:21135508). Plays a role in mitochondrial morphology and positioning (PubMed:21135508). Required for skeletal muscle maintenance but not for myogenesis (PubMed:21135508). In skeletal muscles, stabilizes MTMR12 protein levels (PubMed:23818870).

Cellular Location

Cytoplasm. Cell membrane; Peripheral membrane protein. Cell projection, filopodium. Cell projection, ruffle. Late endosome. Cytoplasm, myofibril, sarcomere {ECO:0000250|UniProtKB:Q9Z2C5}. Note=Localizes as a dense cytoplasmic network (PubMed:11001925). Also localizes to the plasma membrane, including plasma membrane extensions such as filopodia and ruffles (PubMed:12118066). Predominantly located in the cytoplasm following interaction with MTMR12 (PubMed:12847286). Recruited to the late endosome following EGF stimulation (PubMed:14722070). In skeletal muscles, co-localizes with MTMR12 in the sarcomere (By similarity) {ECO:0000250|UniProtKB:Q9Z2C5, ECO:0000269|PubMed:11001925, ECO:0000269|PubMed:12118066, ECO:0000269|PubMed:12847286, ECO:0000269|PubMed:14722070}

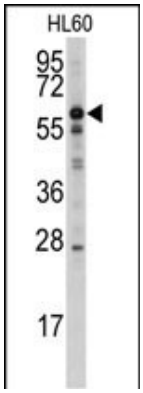
Background

MTM1 is a member of a protein family that encodes tyrosine phosphatases. Myotubularin is required for muscle cell differentiation and mutations in MTM1 have been identified as being responsible for X-linked myotubular myopathy. MTM1 is a potent phosphatidylinositol 3-phosphate phosphatase (PI(3)P). Mutations in the MTM1 gene that cause human myotubular myopathy dramatically reduce the ability of the phosphatase to dephosphorylate PI(3)P. The findings provided evidence that myotubularin exerts its effects during myogenesis by regulating the cellular levels of the inositol lipid PI(3)P.

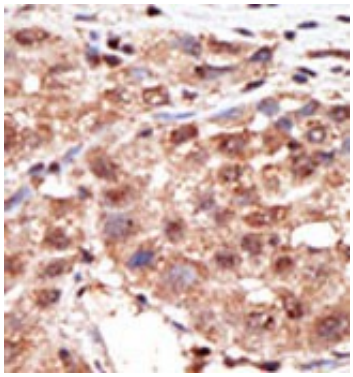
References

Nandurkar, H.H., et al., Proc. Natl. Acad. Sci. U.S.A. 100(15):8660-8665 (2003).
Biancalana, V., et al., Hum. Genet. 112(2):135-142 (2003).
Wishart, M.J., et al., Trends Cell Biol. 12(12):579-585 (2002).
Herman, G.E., et al., Hum. Mutat. 19(2):114-121 (2002).
Sutton, I.J., et al., Neurology 57(5):900-902 (2001).

Images



Western blot analysis of anti-MTM1 Antibody (N-term) (Cat.#AP6809a) in HL60 cell line lysates (35ug/lane). MTM1(arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- A cDNA-based random RNA interference library for functional genetic screens in embryonic stem cells.