10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TMEM49 Rabbit pAb

Catalog # AP96946

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q96GC9
Other Accession	Q96GC9
Reactivity	Mouse
Predicted	Rat, Pig, Human, Rabbit, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	46238
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human TMEM49
Epitope Specificity	361-406/406
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the VMP1 family.
SUBUNIT	Belongs to the VMP1 family.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Vacuole membrane protein 1 (VMP1)/TMEM49 is a transmembrane protein localized to intracellular vacuoles and was discovered as a protein that promotes vacuole formation in acinar cells associated with acute pancreatitis (1). Over-expression of VMP1 promotes vacuole formation and subsequent cell death (1). Subsequent studies have shown that VMP1 expression is induced by starvation and the mTOR inhibitor, rapamycin, and can trigger autophagy (2). VMP1 is targeted, along with LC3, to autophagosome membranes (2). Knockdown of VMP1 can inhibit autophagosome formation (2). VMP1 interacts with Beclin-1, a key autophagy protein that activates the Class III PI3 kinase Vps34, which is regulated by a large network of associated proteins (3). VMP1 functions in the degradation and clearance of zymogen-containing vacuoles during experimental pancreatitis (4). During this process, VMP1 interacts with the ubiquitin protease USP9X, suggesting a possible functional link between the molecular machinery of autophagy and the ubiquitin pathway. Orthologues of VMP1 have been reported in C. elegans (known as EPG-3), Drosophila (known as TANGO-5), and Dictyostelium, and have been shown to play a role in membrane trafficking, orgenelle organization, and autophagy (5-7).

Additional Information

Gene ID	81671
Other Names	EPG3; TANGO5; TMEM49; 3110098I04Rik; 4930579A11Rik; mir-21a; ni-2; VMP1_HUMAN; VMP1; Transmembrane protein 49; TDC1; VMP1_MOUSE;

	NF-E2-inducible protein 2 (Protein ni-2); VMP1_RAT; vacuole membrane protein 1; ectopic P-granules autophagy protein 3 homolog (C. elegans); transport and golgi organization 5 homolog (Drosophila)
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	VMP1 {ECO:0000303|PubMed:28890335, ECO:0000312|HGNC:HGNC:29559}
Function	Phospholipid scramblase involved in lipid homeostasis and membrane dynamics processes (PubMed:33850023, PubMed:33929485). Has phospholipid scramblase activity toward cholesterol and phosphatidylserine, as well as phosphatidylethanolamine and phosphatidylcholine (PubMed:33850023, PubMed:33929485). Required for autophagosome formation: participates in early stages of autophagosome biogenesis at the endoplasmic reticulum (ER) membrane by reequilibrating the leaflets of the ER as lipids are extracted by ATG2 (ATG2A or ATG2B) to mediate autophagosome assembly (PubMed:28890335, PubMed:30093494, PubMed:30933966, PubMed:33850023, PubMed:33929485). Regulates ATP2A2 activity to control ER-isolation membrane contacts for autophagosome formation (PubMed:28890335). In addition to autophagy, involved in other processes in which phospholipid scramblase activity is required (PubMed:31526472, PubMed:33850023). Modulates ER contacts with lipid droplets, mitochondria and endosomes (PubMed:28890335). Plays an essential role in formation of cell junctions (PubMed:17724469). Upon stress such as bacterial and viral infection, promotes formation of cytoplasmic vacuoles followed by cell death (By similarity). Involved in the cytoplasmic vacuolization of acinar cells during the early stage of acute pancreatitis (By similarity).
Cellular Location	Endoplasmic reticulum-Golgi intermediate compartment membrane {ECO:0000250|UniProtKB:Q91ZQ0}; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Vacuole membrane {ECO:0000250|UniProtKB:Q91ZQ0}; Multi- pass membrane protein. Endoplasmic reticulum membrane; Multi-pass membrane protein

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