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ATG16 Antibody

Catalog # ASC10627

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q676U5
Other Accession	NP_110430, 124256480
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	68265
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ATG16 antibody can be used for the detection of ATG16 by Western blot at 0.25 - 0.5 □g/mL. Antibody can also be used for immunocytochemistry starting at 2 □g/mL. For immunofluorescence start at 4 □g/mL.

Additional Information

Gene ID	55054
Other Names	Autophagy-related protein 16-1, APG16-like 1, ATG16L1, APG16L
Target/Specificity	ATG16L1;
Reconstitution & Storage	ATG16 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	ATG16 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ATG16L1 {ECO:0000303|PubMed:17200669, ECO:0000312|HGNC:HGNC:21498}
Function	Plays an essential role in both canonical and non-canonical autophagy: interacts with ATG12-ATG5 to mediate the lipidation to ATG8 family proteins (MAP1LC3A, MAP1LC3B, MAP1LC3C, GABARAPL1, GABARAPL2 and GABARAP) (PubMed:23376921, PubMed:23392225, PubMed:24553140, PubMed:24954904, PubMed:27273576, PubMed:29317426, PubMed:30778222, PubMed:33909989). Acts as a molecular hub, coordinating autophagy pathways via distinct domains that support either canonical or non- canonical signaling (PubMed:29317426, PubMed:30778222). During canonical autophagy, interacts with ATG12-ATG5 to mediate the conjugation

	of phosphatidylethanolamine (PE) to ATG8 proteins, to produce a membrane-bound activated form of ATG8 (PubMed:23376921, PubMed:23392225, PubMed:24553140, PubMed:24954904, PubMed:27273576). Thereby, controls the elongation of the nascent autophagosomal membrane (PubMed:23376921, PubMed:23392225, PubMed:24553140, PubMed:24954904, PubMed:27273576). As part of the ATG8 conjugation system with ATG5 and ATG12, required for recruitment of LRRK2 to stressed lysosomes and induction of LRRK2 kinase activity in response to lysosomal stress (By similarity). Also involved in non-canonical autophagy, a parallel pathway involving conjugation of ATG8 proteins to single membranes at endolysosomal compartments, probably by catalyzing conjugation of phosphatidylserine (PS) to ATG8 (PubMed:33909989). Non-canonical autophagy plays a key role in epithelial cells to limit lethal infection by influenza A (IAV) virus (By similarity). Regulates mitochondrial antiviral signaling (MAVS)-dependent type I interferon (IFN-I) production (PubMed:22749352, PubMed:25645662). Negatively regulates NOD1- and NOD2-driven inflammatory cytokine response (PubMed:24238340). Instead, promotes an autophagy-dependent antibacterial pathway together with NOD1 or NOD2 (PubMed:20637199). Plays a role in regulating morphology and function of Paneth cell (PubMed:18849966).
Cellular Location	Cytoplasm. Preautophagosomal structure membrane; Peripheral membrane protein. Endosome membrane; Peripheral membrane protein. Lysosome membrane; Peripheral membrane protein. Note=Recruited to omegasomes membranes by WIPI2 (By similarity). Omegasomes are endoplasmic reticulum connected strutures at the origin of preautophagosomal structures (By similarity). Localized to preautophagosomal structure (PAS) where it is involved in the membrane targeting of ATG5 (By similarity). Also localizes to discrete punctae along the ciliary axoneme (By similarity). Upon activation of non-canonical autophagy, recruited to single-membrane endolysosomal compartments (PubMed:29317426). Under starved conditions, the ATG12-ATG5-ATG16L1 complex is translocated to phagophores driven by RAB33B (PubMed:32960676). {ECO:0000250|UniProtKB:Q8C0J2, ECO:0000269|PubMed:29317426, ECO:0000269|PubMed:32960676}

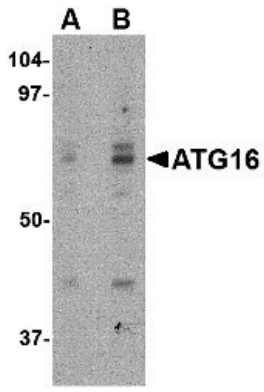
Background

ATG16 Antibody: Autophagy, the process of bulk degradation of cellular proteins through an autophagosomic-lysosomal pathway is important for normal growth control and may be defective in tumor cells. It is involved in the preservation of cellular nutrients under starvation conditions as well as the normal turnover of cytosolic components. This process is negatively regulated by TOR (Target of rapamycin) through phosphorylation of autophagy protein APG1. ATG16, another member of the autophagy protein family, forms a complex with the ATG5-ATG12 conjugate. This multimeric protein has been shown to be essential for autophagosome formation in both yeast and mammals and targets the ATG5-ATG12 complex to the autophagic isolation membrane during the formation of the autophagosome. Because mammalian ATG16 has seven WD-repeats in its C-terminal domain, it has been suggested that these may form a platform for further protein-protein interactions. Multiple isoforms of ATG16 are known to exist.

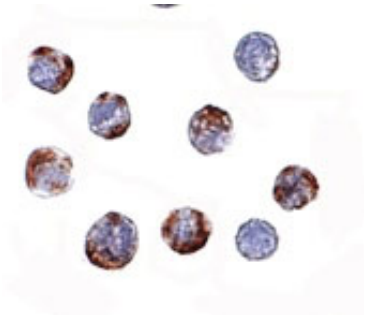
References

Gozuacik D and Kimchi A. Autophagy as a cell death and tumor suppressor mechanism. Oncogene.2004; 23:2891-906.
Kisen GO, Tessitore L, Costelli P, et al. Reduced autophagic activity in primary rat hepatocellular carcinoma and ascites hepatoma cells. Carcinogenesis1993; 14:2501-5.
Kamada Y, Funakoshi T, Shintani T, et al. Tor-mediated induction of autophagy via Apg1 protein kinase complex. J. Cell. Biol.2000; 150:1507-13.
Mizushima N, Noda T, and Ohsumi Y. Apg16p is required for the function of the apg12p-apg5p conjugate in the yeast autophagy pathway. EMBO J.1999; 18:3888-96.

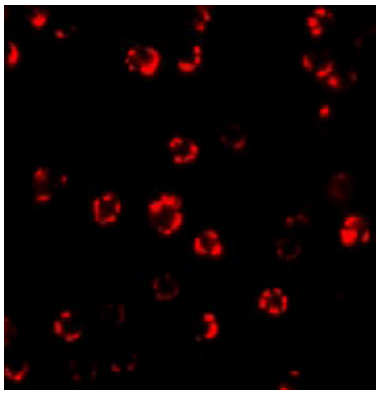
Images



Western blot analysis of ATG16 in HeLa cell lysate with ATG16 antibody at (A) 0.25 and (B) 0.5 µg/mL.



Immunocytochemistry of ATG16 in HeLa cells with ATG16 antibody at 2 µg/mL.



Immunofluorescence of ATG16 in Hela cells with ATG16 antibody at 4 µg/mL.

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