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ATG4C Antibody

Catalog # ASC11828

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96DT6
Other Accession	NP_835739, 30410846
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	52497
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ATG4C antibody can be used for detection of ATG4C by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	84938
Other Names	Cysteine protease ATG4C, 3.4.22.-, AUT-like 3 cysteine endopeptidase, Autophagin-3, Autophagy-related cysteine endopeptidase 3, Autophagy-related protein 4 homolog C, ATG4C, APG4C, AUTL1, AUTL3
Target/Specificity	ATG4C; ATG4C antibody is human, mouse and rat reactive. ATG4C is predicted to not cross-react with other ATG4 proteins.
Reconstitution & Storage	ATG4C antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	ATG4C Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ATG4C {ECO:0000303|PubMed:21177865, ECO:0000312|HGNC:HGNC:16040}
Function	Cysteine protease that plays a key role in autophagy by mediating both proteolytic activation and delipidation of ATG8 family proteins (PubMed:21177865, PubMed:29458288, PubMed:30661429). The protease activity is required for proteolytic activation of ATG8 family proteins: cleaves the C-terminal amino acid of ATG8 proteins MAP1LC3 and GABARAPL2, to reveal a C-terminal glycine (PubMed:21177865). Exposure of the glycine at the C-terminus is essential for ATG8 proteins conjugation to phosphatidylethanolamine (PE) and insertion to membranes, which is

necessary for autophagy (By similarity). In addition to the protease activity, also mediates delipidation of ATG8 family proteins (PubMed:29458288, PubMed:33909989). Catalyzes delipidation of PE-conjugated forms of ATG8 proteins during macroautophagy (PubMed:29458288, PubMed:33909989). Compared to ATG4B, the major protein for proteolytic activation of ATG8 proteins, shows weaker ability to cleave the C-terminal amino acid of ATG8 proteins, while it displays stronger delipidation activity (PubMed:29458288). In contrast to other members of the family, weakly or not involved in phagophore growth during mitophagy (PubMed:33773106).

Cellular Location Cytoplasm {ECO:0000250|UniProtKB:Q8BGE6}.

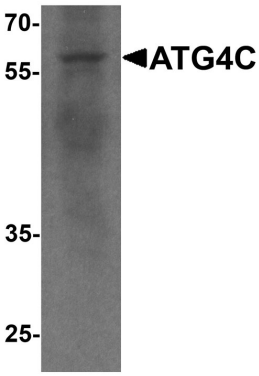
Background

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 (1,2). ATG4C, also known as autophagin-3, is one of four mammalian orthologs of the yeast ATG4 protein; all four are cysteine proteases (3). Recent studies have shown that ATG4C and Beclin-1 are regulated by the microRNA miR-376b; overexpression of miR-376b led to decreased mRNA and protein levels, thereby blocking starvation and TOR inhibition-related autophagy (4).

References

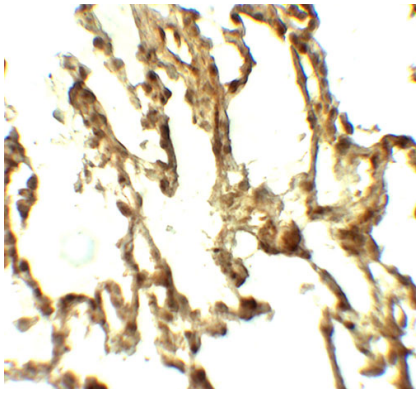
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Kisen GO, Tessitore L, Costelli P, et al. Reduced autophagic activity in primary rat hepatocellular carcinoma and ascites hepatoma cells. Carcinogenesis 1993; 14:2501-5.
Marino G, Uria JA, Puente XS, et al. Human autophagins, a family of cysteine proteinases potentially implicated in cell degradation by autophagy. J. Biol. Chem. 2003; 278:3671-8.
Korkmaz G, le Sage C, Tekirdag KA, et al. miR-376b controls starvation and TOR inhibition-related autophagy by targeting ATG4C and BECN1. Autophagy 2012; 8:165-76.

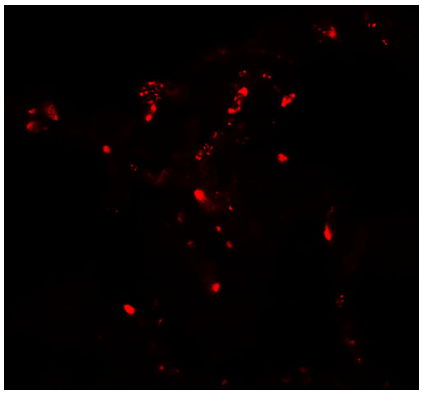
Images



Western blot analysis of ATG4C in A549 cell lysate with ATG4C antibody at 1 µg/ml.

Immunohistochemistry of ATG4C in human lung tissue with ATG4C antibody at 5 µg/ml.





Immunofluorescence of ATG4C in human lung tissue with ATG4C antibody at 20 µg/ml.

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