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ATG4C Antibody
Catalog # ASC11828

Specification

ATG4C Antibody - Product Information

Application	**WB, IHC, IF**
Primary Accession	Q96DT6
Other Accession	NP_835739, 30410846
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 50 kDa** **Observed: 57 kDa KDa**
Application Notes	**ATG4C antibody can be used for detection of ATG4C by Western blot at 1 - 2 µg/ml. Antibody can also be used for Immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.**

ATG4C Antibody - Additional Information

Gene ID **84938**

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.

ATG4C Antibody - 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).

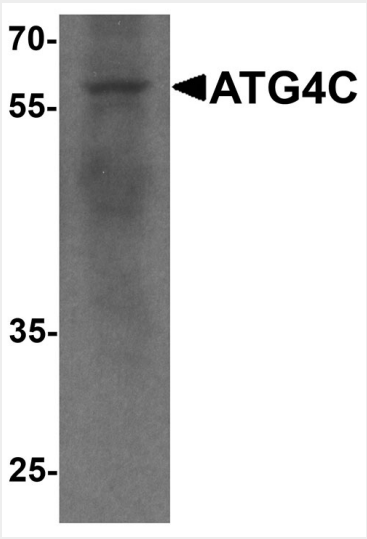
Cellular Location
Cytoplasm {ECO:0000250|UniProtKB:Q8BGE6}.

ATG4C Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

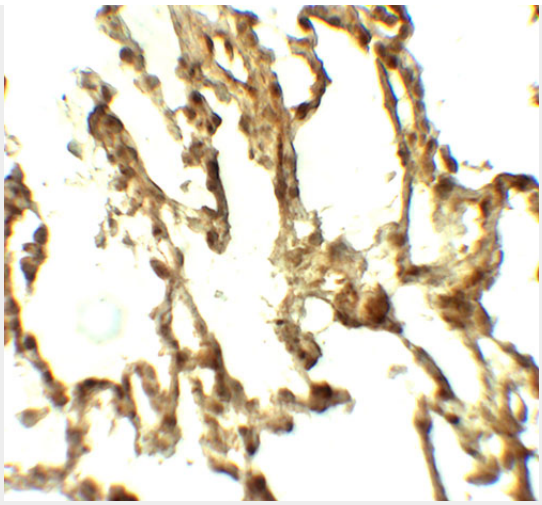
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

ATG4C Antibody - Images

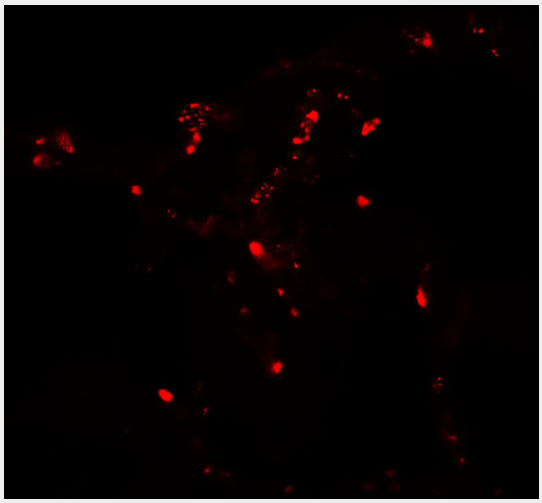


Western blot analysis of ATG4C in A549 cell lysate with ATG4C antibody at 1 µg/ml.

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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.

ATG4C Antibody - 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).

ATG4C Antibody - 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. 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.