

ATG3 Antibody

Catalog # ASC11143

Specification

ATG3 Antibody - Product Information

Application	WB, IHC, IF
Primary Accession	Q9NT62
Other Accession	NP_071933 , 19526773
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	ATG3 antibody can be used for detection of ATG3 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immu- nohistochemistry starting at 5 µg/mL. For immun- ofluorescence start at 20 µg/mL.

ATG3 Antibody - Additional Information

Gene ID **64422**
Target/Specificity
ATG3;

Reconstitution & Storage

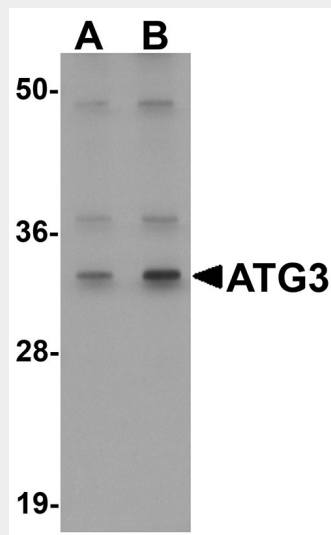
ATG3 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions

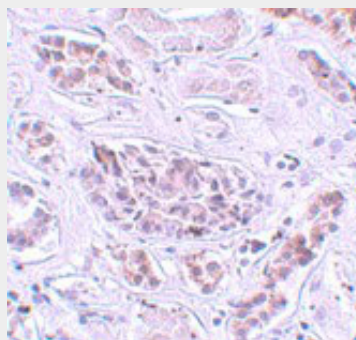
ATG3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

ATG3 Antibody - Protein Information

Name ATG3



Western blot analysis of ATG3 in Mouse kidney tissue Lysate with ATG3 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of ATG3 in human kidney tissue with ATG3 antibody at 5 µg/mL.

Synonyms APG3, APG3L

Function

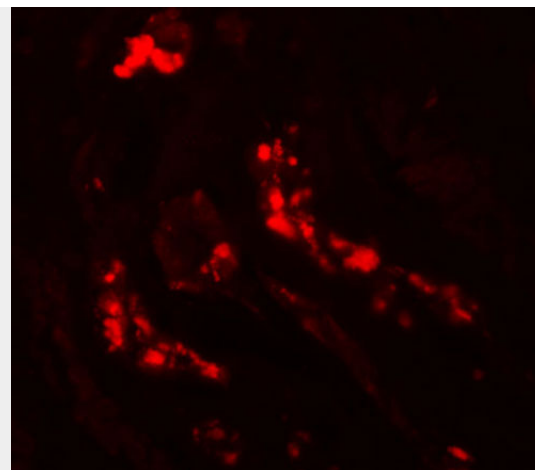
E2 conjugating enzyme required for the cytoplasm to vacuole transport (Cvt), autophagy, and mitochondrial homeostasis. Responsible for the E2-like covalent binding of phosphatidylethanolamine to the C-terminal Gly of ATG8-like proteins (GABARAP, GABARAPL1, GABARAPL2 or MAP1LC3A). The ATG12-ATG5 conjugate plays a role of an E3 and promotes the transfer of ATG8-like proteins from ATG3 to phosphatidylethanolamine (PE). This step is required for the membrane association of ATG8-like proteins. The formation of the ATG8- phosphatidylethanolamine conjugates is essential for autophagy and for the cytoplasm to vacuole transport (Cvt). Preferred substrate is MAP1LC3A. Also acts as an autocatalytic E2-like enzyme, catalyzing the conjugation of ATG12 to itself, ATG12 conjugation to ATG3 playing a role in mitochondrial homeostasis but not in autophagy. ATG7 (E1-like enzyme) facilitates this reaction by forming an E1-E2 complex with ATG3. Promotes primary ciliogenesis by removing OFD1 from centriolar satellites via the autophagic pathway.

Cellular Location

Cytoplasm.

Tissue Location

Widely expressed, with a highest expression in heart, skeletal muscle, kidney, liver and placenta



Immunofluorescence of ATG3 in human kidney with ATG3 antibody at 20 µg/mL.

ATG3 Antibody - Background

ATG3 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. ATG3 (APG3) is a widely expressed conjugating enzyme for APG8 lipidation, an essential step for the initiation of autophagy. It functions as an E2-like enzyme during the initial stages of autophagosome formation by catalyzing the formation of the Atg8-phosphatidylethanolamine (Atg8-PE) conjugate, which is critical for autophagy.

ATG3 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.
- 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.
- Yamada Y, Suzuki NN, Hanada T, et al. The

ATG3 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 Cytometry](#)
- [Cell Culture](#)

crystal structure of Atg3, an autophagy-related ubiquitin carrier protein (E2) enzyme that mediates Atg8 lipidation. J. Biol. Chem.2007; 282:8036-43.