

APG7 Antibody
Catalog # ASC10360

Specification

APG7 Antibody - Product Information

Application	WB, ICC, IF
Primary Accession	O95352
Other Accession	NP_006386 , 5453668
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	Predicted: 69, 74, 77 kDa

Application Notes	Observed: 77 kDa KDa APG7 antibody can be used for the detection of APG7 by Western blot at 0.5 - 2 µg/mL. Antibody can also be used for immunocytochemistry starting at 10 µg/mL. For immunofluorescence start at 20 µg/mL.
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APG7 Antibody - Additional Information

Gene ID	10533
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Other Names

APG7 Antibody: GSA7, APG7L, APG7-LIKE, Ubiquitin-like modifier-activating enzyme ATG7, ATG12-activating enzyme E1 ATG7, APG7-like, ATG7 autophagy related 7 homolog (S. cerevisiae)

Target/Specificity

ATG7; At least three isoforms of APG7 are known to exist; this antibody will detect all three isoforms. APG7 antibody is predicted not to cross-react with other ATG family proteins.

Reconstitution & Storage

APG7 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

APG7 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

APG7 Antibody - Protein Information

Name ATG7 ([HGNC:16935](#))

Synonyms APG7L

Function

E1-like activating enzyme involved in the 2 ubiquitin-like systems required for cytoplasm to vacuole transport (Cvt) and autophagy. Activates ATG12 for its conjugation with ATG5 as well as the ATG8 family proteins for their conjugation with phosphatidylethanolamine. Both systems are needed for the ATG8 association to Cvt vesicles and autophagosomes membranes. Required for autophagic death induced by caspase-8 inhibition. Facilitates LC3-I lipidation with phosphatidylethanolamine to form LC3-II which is found on autophagosomal membranes (PubMed:34161705). Required for mitophagy which contributes to regulate mitochondrial quantity and quality by eliminating the mitochondria to a basal level to fulfill cellular energy requirements and preventing excess ROS production. Modulates p53/TP53 activity to regulate cell cycle and survival during metabolic stress. Also plays a key role in the maintenance of axonal homeostasis, the prevention of axonal degeneration, the maintenance of hematopoietic stem cells, the formation of Paneth cell granules, as well as in adipose differentiation. Plays a role in regulating the liver clock and glucose metabolism by mediating the autophagic degradation of CRY1 (clock repressor) in a time-dependent manner (By similarity).

Cellular Location

Cytoplasm. Preautophagosomal structure. Note=Localizes also to discrete punctae along the ciliary axoneme and to the base of the ciliary axoneme

Tissue Location

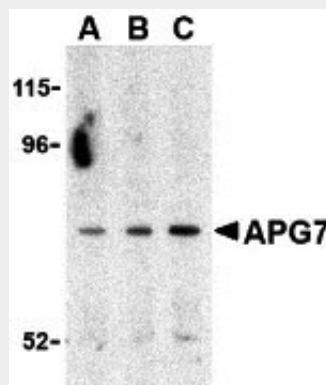
Widely expressed, especially in kidney, liver, lymph nodes and bone marrow.

APG7 Antibody - Protocols

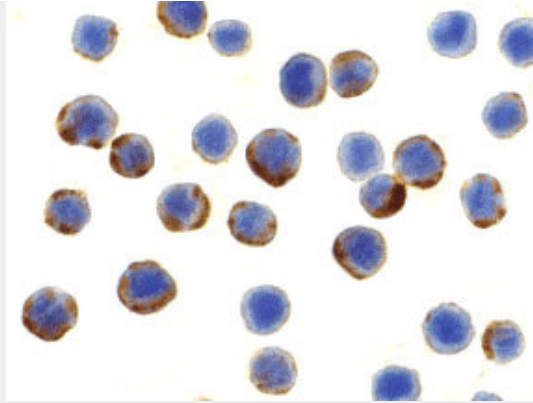
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

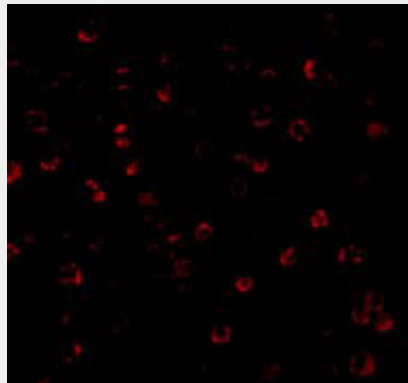
APG7 Antibody - Images



Western blot analysis of APG7 in Caco-2 cell lysate with APG7 antibody at (A) 0.5, (B) 1 and (C) 2 $\mu\text{g/mL}$.



Immunocytochemistry of APG7 in MCF7 cells with APG7 antibody at 10 µg/mL.



Immunofluorescence of APG7 in MCF7 cells with APG7 antibody at 20 µg/mL.

APG7 Antibody - Background

APG7 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. Another member of the autophagy family of proteins is APG7 which was identified in yeast as a ubiquitin-E1-like enzyme; this function is conserved in the mammalian homolog. In mammalian cells, APG7 is essential for autophagy conjugation systems, autophagosome formation, starvation-induced bulk degradation of proteins and organelles. It has been suggested that caspase-8 may alter APG7 levels and thus the APG7 program of autophagic cell death.

APG7 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.
- Mizushima N, Noda T, Yoshimori T, et al. A protein conjugation system essential for autophagy. *Nature* 1998; 395:395-8.