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ATG4D Antibody (C-Terminus)

Goat Polyclonal Antibody
Catalog # ALS14584

Specification

ATG4D Antibody (C-Terminus) - Product Information

Application	**IHC**
Primary Accession	Q86TL0
Reactivity	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Calculated MW	**53kDa KDa**

ATG4D Antibody (C-Terminus) - Additional Information

Gene ID 84971

Other Names
Cysteine protease ATG4D, 3.4.22.-, AUT-like 4 cysteine endopeptidase, Autophagin-4, Autophagy-related cysteine endopeptidase 4, Autophagy-related protein 4 homolog D, Cysteine protease ATG4D, mitochondrial, ATG4D, APG4D, AUTL4

Target/Specificity
Human ATG4D.

Reconstitution & Storage
Store at -20°C. Minimize freezing and thawing.

Precautions
ATG4D Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

ATG4D Antibody (C-Terminus) - Protein Information

Name ATG4D {ECO:0000303|PubMed:19549685, ECO:0000312|HGNC:HGNC:20789}

Function
[Cysteine protease ATG4D]: 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). Also involved in non-canonical autophagy, a parallel pathway involving conjugation of ATG8 proteins to single membranes at endolysosomal compartments, by catalyzing delipidation of ATG8 proteins conjugated to phosphatidylserine (PS) (PubMed:33909989). ATG4D plays a role in the autophagy-mediated neuronal homeostasis in the central nervous system (By similarity). Compared to other members of the family (ATG4A, ATG4B or ATG4C), constitutes the major protein for the delipidation activity, while it promotes weak proteolytic activation of ATG8 proteins (By similarity). Involved in phagophore growth during mitophagy independently of its protease activity and of ATG8 proteins: acts by regulating ATG9A trafficking to mitochondria and promoting phagophore- endoplasmic reticulum contacts during the lipid transfer phase of mitophagy (PubMed:33773106).

Cellular Location
[Cysteine protease ATG4D]: Cytoplasm

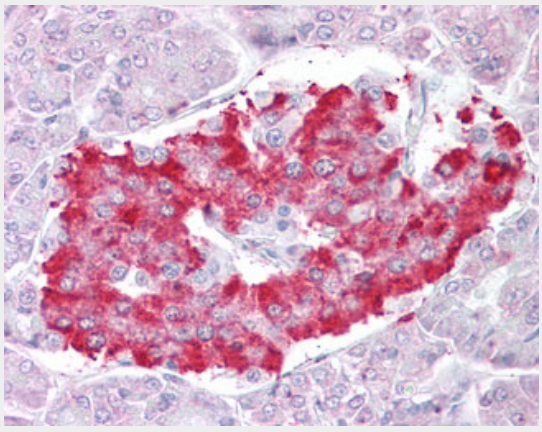
Tissue Location
Widely expressed in testis.

ATG4D Antibody (C-Terminus) - 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

ATG4D Antibody (C-Terminus) - Images



Anti-ATG4D antibody IHC of human pancreas.

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ATG4D Antibody (C-Terminus) - Background

Cysteine protease ATG4D: Cysteine protease required for the cytoplasm to vacuole transport (Cvt) and autophagy. Cleaves the C-terminal amino acid of ATG8 family proteins MAP1LC3 and GABARAPL2, to reveal a C-terminal glycine. 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. Has also an activity of delipidating enzyme for the PE-conjugated forms.

ATG4D Antibody (C-Terminus) - References

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Grimwood J.,et al.Nature 428:529-535(2004).
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Betin V.M.,et al.J. Cell Sci. 122:2554-2566(2009).
Li M.,et al.J. Biol. Chem. 286:7327-7338(2011).