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ATG4A Antibody (C-Terminus)

Rabbit Polyclonal Antibody
Catalog # ALS16415

Specification

ATG4A Antibody (C-Terminus) - Product Information

Application	**IHC**
Primary Accession	Q8WYN0
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**45kDa KDa**

ATG4A Antibody (C-Terminus) - Additional Information

Gene ID 115201

Other Names
Cysteine protease ATG4A, 3.4.22.-, AUT-like 2 cysteine endopeptidase, Autophagin-2, Autophagy-related cysteine endopeptidase 2, Autophagy-related protein 4 homolog A, hAPG4A, ATG4A, APG4A, AUTL2

Target/Specificity
ATG4A antibody is human, mouse and rat reactive. At least two isoforms of ATG4A are known to exist; this antibody will detect both isoforms. ATG4A is predicted to not cross-react with other ATG4 proteins.

Reconstitution & Storage
Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.

Precautions
ATG4A Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

ATG4A Antibody (C-Terminus) - Protein Information

Name ATG4A {ECO:0000303|Ref.20, ECO:0000312|HGNC:HGNC:16489}

Function
Cysteine protease that plays a key role in autophagy by mediating both proteolytic activation and delipidation of ATG8 family proteins (PubMed:15169837, PubMed:12473658, PubMed:17347651, PubMed:21177865, PubMed:21245471, PubMed:22302004, PubMed:32732290). The protease

activity is required for proteolytic activation of ATG8 family proteins: cleaves the C-terminal amino acid of ATG8 proteins to reveal a C-terminal glycine (PubMed:15169837, PubMed:12473658, PubMed:17347651, PubMed:21177865, PubMed:21245471, PubMed:22302004). 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 (PubMed:15169837, PubMed:12473658, PubMed:17347651, PubMed:21177865, PubMed:21245471, PubMed:22302004). Preferred substrate is GABARAPL2 followed by MAP1LC3A and GABARAP (PubMed:15169837, PubMed:12473658, PubMed:17347651, PubMed:21177865, PubMed:21245471, PubMed:22302004). Protease activity is also required to counteract formation of high-molecular weight conjugates of ATG8 proteins (ATG8ylation): acts as a deubiquitinating- like enzyme that removes ATG8 conjugated to other proteins, such as ATG3 (PubMed:31315929, PubMed:33773106). 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). 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
Cytoplasm {ECO:0000250|UniProtKB:Q8BGE6}.

ATG4A Antibody (C-Terminus) - Protocols

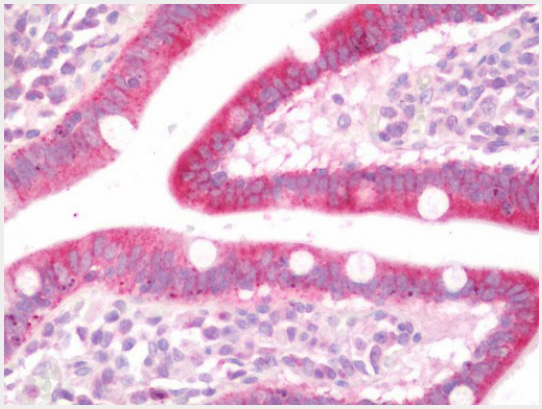
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation

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- Flow Cytomety
- Cell Culture

ATG4A Antibody (C-Terminus) - Images



Human Small Intestine: Formalin-Fixed, Paraffin-Embedded (FFPE)

ATG4A Antibody (C-Terminus) - Background

Cysteine protease required for the cytoplasm to vacuole transport (Cvt) and autophagy. Cleaves the C-terminal amino acid of ATG8 family proteins 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. Preferred substrate is GABARAPL2 followed by MAP1LC3A and GABARAP. Has also an activity of delipidating enzyme for the PE-conjugated forms.

ATG4A Antibody (C-Terminus) - References

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Kabeya Y.,et al.J. Cell Sci. 117:2805-2812(2004).
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