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ATG4C Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP1810a

Specification

ATG4C Antibody (N-term) - Product Information

Application	**WB, IHC-P,E**
Primary Accession	Q96DT6
Reactivity	**Human, Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**52497**
Antigen Region	**33-62**

ATG4C Antibody (N-term) - Additional Information

Gene ID 84938

Other Names
Cysteine protease ATG4C, 3422-, AUT-like 3 cysteine endopeptidase, Autophagin-3, Autophagy-related cysteine endopeptidase 3, Autophagy-related protein 4 homolog C, ATG4C, APG4C, AUTL1, AUTL3

Target/Specificity
This ATG4C antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 33-62 amino acids from the N-terminal region of human ATG4C.

Dilution
WB~~1:1000
IHC-P~~1:50~100
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
ATG4C Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

ATG4C Antibody (N-term) - 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).

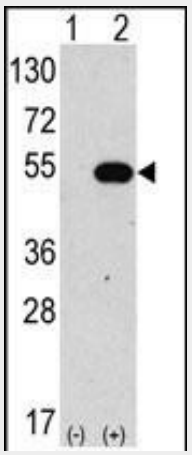
Cellular Location
Cytoplasm {ECO:0000250|UniProtKB:Q8BGE6}.

ATG4C Antibody (N-term) - 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 (N-term) - Images



Western blot analysis of anti-hAPG4C-Y48 Pab (Cat. #AP1810a) in 293 cell line lysates transiently transfected with the ATG4C gene (2ug/lane). hAPG4C-Y48(arrow) was detected using the purified Pab.

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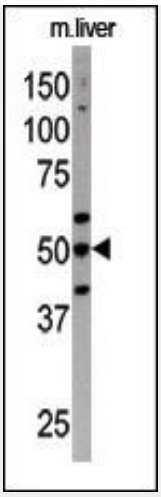
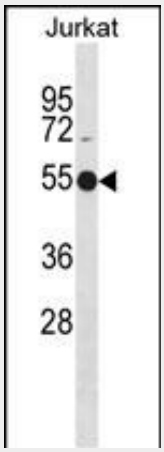
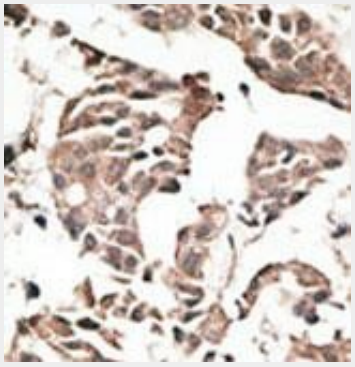


The anti-APG4C Pab (Cat. #AP1810a) is used in Western blot to detect APG4C in mouse liver tissue lysate



APG4C Antibody (Y48) (Cat. #AP1810a) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the APG4C antibody detected the APG4C protein (arrow).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

ATG4C Antibody (N-term) - Background

Macroautophagy is the major inducible pathway for the general turnover of cytoplasmic constituents in eukaryotic cells, it is also responsible for the degradation of active cytoplasmic

enzymes and organelles during nutrient starvation. Macroautophagy involves the formation of double-membrane bound autophagosomes which enclose the cytoplasmic constituent targeted for degradation in a membrane bound structure, which then fuse with the lysosome (or vacuole) releasing a single-membrane bound autophagic bodies which are then degraded within the lysosome (or vacuole).

APG4 is a cysteine protease required for autophagy, which cleaves the C-terminal part of either MAP1LC3, GABARAPL2 or GABARAP, allowing the liberation of form I. A subpopulation of form I is subsequently converted to a smaller form (form II). Form II, with a revealed C-terminal glycine, is considered to be the phosphatidylethanolamine (PE)-conjugated form, and has the capacity for the binding to autophagosomes.

ATG4C Antibody (N-term) - References

Baehrecke EH. Nat Rev Mol Cell Biol. 6(6):505-10. (2005)
Lum JJ, et al. Nat Rev Mol Cell Biol. 6(6):439-48. (2005)
Greenberg JT. Dev Cell. 8(6):799-801. (2005)
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Shintani T and Klionsky DJ. Science. 306(5698):990-5. (2004)