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KD-Validated Anti-ATG4B Rabbit Monoclonal Antibody

Rabbit monoclonal antibody

Catalog # AGI1322

Specification

KD-Validated Anti-ATG4B Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	Q9Y4P1
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 44 kDa , observed, 44 kDa KDa**
Gene Name	**ATG4B**
Aliases	**ATG4B; Autophagy Related 4B Cysteine Peptidase; AUTL1; KIAA0943; APG4B; Autophagy-Related Cysteine Endopeptidase 1; Autophagy-Related Protein 4 Homolog B; AUT-Like 1 Cysteine Endopeptidase; Cysteine Protease ATG4B; Autophagin-1; HsAPG4B; HAPG4B; ATG4 Autophagy Related 4 Homolog B (S. Cerevisiae); APG4 Autophagy 4 Homolog B (S. Cerevisiae); Autophagy Related 4B, Cysteine Peptidase; ATG4 Autophagy Related 4 Homolog B; APG4 Autophagy 4 Homolog B; DKFZp586D1822; DKFZP586D1822; EC 3.4.22.-; EC 3.4.22; Apg4B**
Immunogen	**A synthesized peptide derived from human Atg4B**

KD-Validated Anti-ATG4B Rabbit Monoclonal Antibody - Additional Information

Gene ID	**23192**

Other Names

Cysteine protease ATG4B, 3.4.22.-, AUT-like 1 cysteine endopeptidase, Autophagy-related cysteine endopeptidase 1, Autophagin-1, Autophagy-related protein 4 homolog B, HsAPG4B, hAPG4B, ATG4B {ECO:0000303|PubMed:15187094, ECO:0000312|HGNC:HGNC:20790}

KD-Validated Anti-ATG4B Rabbit Monoclonal Antibody - Protein Information

Name ATG4B {ECO:0000303|PubMed:15187094, ECO:0000312|HGNC:HGNC:20790}

Function

Cysteine protease that plays a key role in autophagy by mediating both proteolytic activation and delipidation of ATG8 family proteins (PubMed:15169837, PubMed:15187094, PubMed:<a

href="http://www.uniprot.org/citations/17347651" target="_blank">17347651, PubMed:19322194, PubMed:21177865, PubMed:22302004, PubMed:26378241, PubMed:27527864, PubMed:28633005, PubMed:28821708, PubMed:29232556, PubMed:30076329, PubMed:30443548, PubMed:30661429). Required for canonical autophagy (macroautophagy), non-canonical autophagy as well as for mitophagy (PubMed:33773106, PubMed:33909989). The protease activity is required for proteolytic activation of ATG8 family proteins: cleaves the C-terminal amino acid of ATG8 proteins MAP1LC3A, MAP1LC3B, MAP1LC3C, GABARAPL1, GABARAPL2 and GABARAP, to reveal a C- terminal glycine (PubMed:15169837, PubMed:15187094, PubMed:17347651, PubMed:19322194, PubMed:20818167, PubMed:21177865, PubMed:22302004, PubMed:27527864, PubMed:28287329, PubMed:28633005, PubMed:29458288, PubMed:30661429). 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:15187094, PubMed:17347651, PubMed:19322194, PubMed:21177865, 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:15187094, PubMed:19322194, PubMed:28633005, PubMed:29458288, PubMed:32686895, PubMed:33909989). Catalyzes delipidation of PE- conjugated forms of ATG8 proteins during macroautophagy (PubMed:15187094, PubMed:19322194, PubMed:29458288, PubMed:32686895, 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). Compared to other members of the family (ATG4A, ATG4C or ATG4C), constitutes the major protein for proteolytic activation of ATG8 proteins, while it displays weaker delipidation activity than other ATG4 paralogs (PubMed:29458288, PubMed:30661429). 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).

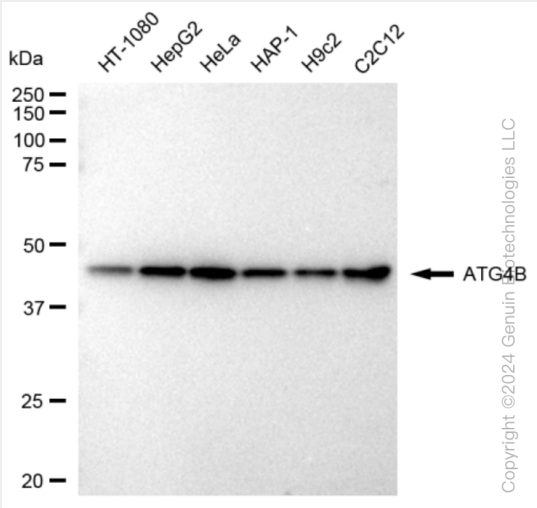
Cellular Location
Cytoplasm. Cytoplasm, cytosol. Cytoplasmic vesicle, autophagosome. Endoplasmic reticulum. Mitochondrion. Note=Mainly localizes to the cytoplasm, including cytosol (PubMed:29165041). A samll potion localizes to mitochondria; phosphorylation at Ser-34 promotes localization to mitochondria (PubMed:29165041).

KD-Validated Anti-ATG4B Rabbit Monoclonal 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 Cytomety
- Cell Culture

KD-Validated Anti-ATG4B Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-ATG4B antibody (Cat#AGI1322). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-ATG4B antibody (Cat#AGI1322, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

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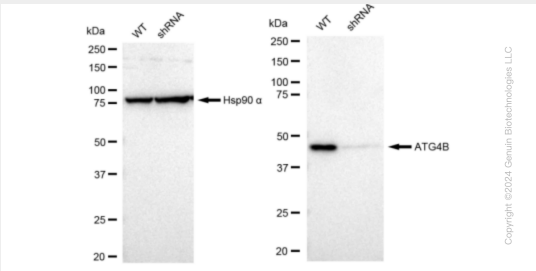
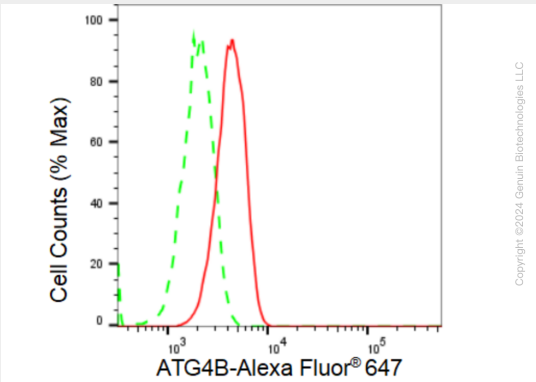
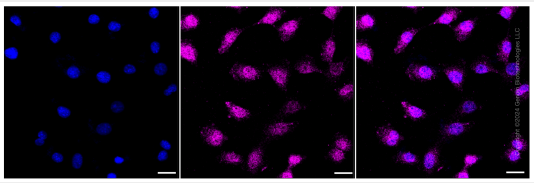


Western blotting analysis using anti-ATG4B antibody (Cat#AGI1322). ATG4B expression in wild type (WT) and ATG4B shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-ATG4B antibody (Cat#AGI1322, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of ATG4B expression in C2C12 cells using ATG4B antibody (Cat#AGI1322, 1:2000). Green, isotype control; red, ATG4B.



Immunocytochemical staining of C2C12 cells with ATG4B antibody (Cat#AGI1322, 1:1,000). Nuclei were stained blue with DAPI; ATG4B was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Low. Scale bar: 20 µm.