

ATG4A Rabbit mAb

Catalog # AP75120

Product Information

Application WB, IHC-P, IP
Primary Accession Q8WYN0
Host Rabbit

Clonality Monoclonal Antibody

Calculated MW 45378

Additional Information

Gene ID 115201

Other Names ATG4A

Dilution WB~~1/500-1/1000 IHC-P~~N/A IP~~N/A

Format 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and

0.05% BSA.

Storage Store at 4°C short term. Aliquot and store at -20°C long term. Avoid

freeze/thaw cycles.

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:12473658, PubMed:15169837, PubMed:17347651, PubMed:21177865, PubMed:21245471, PubMed:22302004,

PubMed:<u>32732290</u>). 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:<u>12473658</u>, PubMed:<u>15169837</u>,

PubMed: 17347651, PubMed: 21177865, PubMed: 21245471,

PubMed:<u>22302004</u>). 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: 12473658,

PubMed: 15169837, PubMed: 17347651, PubMed: 21177865,

PubMed:<u>21245471</u>, PubMed:<u>22302004</u>). Preferred substrate is GABARAPL2 followed by MAP1LC3A and GABARAP (PubMed:<u>12473658</u>, PubMed:<u>15169837</u>,

PubMed: 17347651, PubMed: 21177865, PubMed: 21245471,

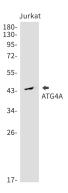
PubMed:<u>22302004</u>). Protease activity is also required to counteract formation of high-molecular weight conjugates of ATG8 proteins (ATG8ylation): acts as a deubiquitinating- like enzyme that removes ATG8 conjugated to other proteins, such as ATG3 (PubMed:<u>31315929</u>, PubMed:<u>33773106</u>). In addition to

the protease activity, also mediates delipidation of ATG8 family proteins (PubMed:29458288, PubMed:33909989). Catalyzes delipidation of PEconjugated 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}.

Images



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