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Cleaved LC3A Antibody
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5518

Specification

Cleaved LC3A Antibody - Product Information

Application	**IF, WB,E**
Primary Accession	Q9H492
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Calculated MW	**H=14 KDa**
Isotype	**Rabbit IgG**
Antigen Source	**HUMAN**

Cleaved LC3A Antibody - Additional Information

Gene ID 84557

Antigen Region
110~146

Other Names
Microtubule-associated proteins 1A/1B light chain 3A, Autophagy-related protein LC3 A, Autophagy-related ubiquitin-like modifier LC3 A, MAP1 light chain 3-like protein 1, MAP1A/MAP1B light chain 3 A, MAP1A/MAP1B LC3 A, Microtubule-associated protein 1 light chain 3 alpha, MAP1LC3A

Dilution
IF~~1:25
WB~~1:1000

Target/Specificity
This Cleaved LC3A antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 110-146 amino acids from human Cleaved LC3A.

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
Cleaved LC3A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Cleaved LC3A Antibody - Protein Information

Name MAP1LC3A

Function
Ubiquitin-like modifier involved in formation of autophagosomal vacuoles (autophagosomes) (PubMed:20713600, PubMed:24290141). While LC3s are involved in elongation of the phagophore membrane, the GABARAP/GATE-16 subfamily is essential for a later stage in autophagosome maturation (PubMed:20713600). Through its interaction with the reticulophagy receptor TEX264, participates in the remodeling of subdomains of the endoplasmic reticulum into autophagosomes upon nutrient stress, which then fuse with lysosomes for endoplasmic reticulum turnover (PubMed:31006538, PubMed:31006537).

Cellular Location
Cytoplasmic vesicle, autophagosome membrane; Lipid-anchor. Endomembrane system; Lipid-anchor. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:Q91VR7}. Note=LC3-II binds to the autophagic membranes.

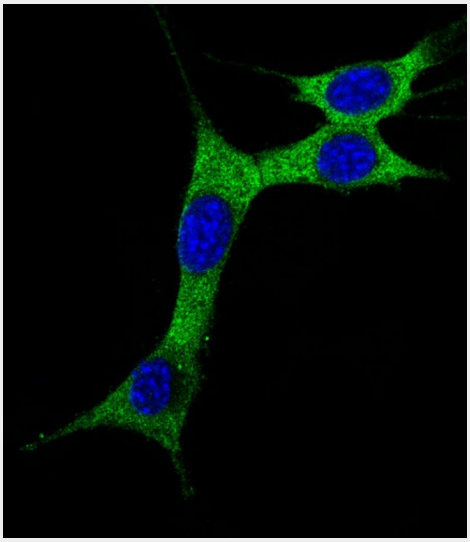
Tissue Location
Most abundant in heart, brain, liver, skeletal muscle and testis but absent in thymus and peripheral blood leukocytes

Cleaved LC3A Antibody - Protocols

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

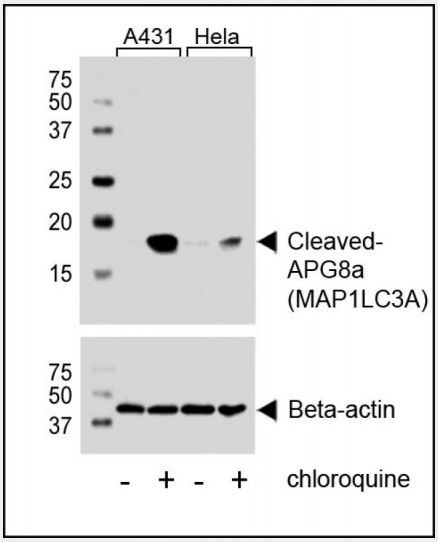
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Cleaved LC3A Antibody - Images

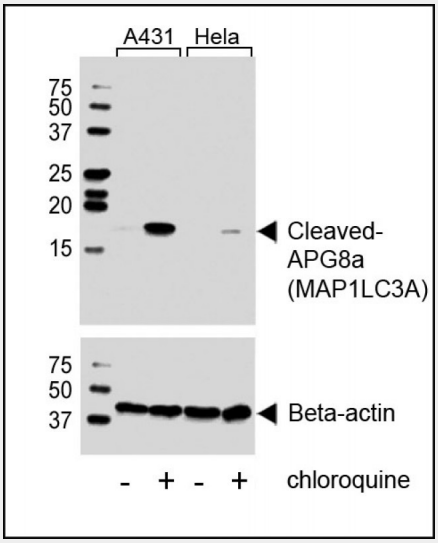


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Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0. 1% Triton X-100 permeabilized NIH/3T3 (Mouse mouse embryonic fibroblasts cell line) cells labeling Pdx1 with AW5519 at 1/25 dilution, followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (1583138) secondary antibody at 1/400 dilution (green). The nuclear counter stain is DAPI (blue). Immunofluorescence image showing cytoplasm on NIH/3T3 cell line.

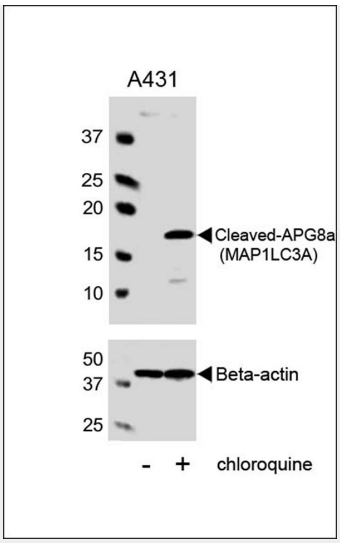


Western blot analysis of lysates from A431, Hela cell line, untreated or treated with chloroquine, using Cleaved-APG8a (MAP1LC3A)(Cat. #AW5518)(upper) or Beta-actin (lower).



Western blot analysis of lysates from A431, Hela cell line, untreated or treated with chloroquine, using Cleaved-APG8a (MAP1LC3A)(Cat. #AW5519)(upper) or Beta-actin (lower).

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Western blot analysis of lysates from A431 cell line,untreated or treated with chloroquine,100ng/ml,using Cleaved-APG8a (MAP1LC3A) Antibody (Cat. #AW5460)(upper) or Beta-actin (lower).

Cleaved LC3A Antibody - 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). MAP1A and MAP1B are microtubule-associated proteins which mediate the physical interactions between microtubules and components of the cytoskeleton. These proteins are involved in formation of autophagosomal vacuoles (autophagosomes). MAP1A and MAP1B each consist of a heavy chain subunit and multiple light chain subunits. MAP1LC3a is one of the light chain subunits and can associate with either MAP1A or MAP1B. The precursor molecule is cleaved by APG4B/ATG4B to form the cytosolic form, LC3-I. This is activated by APG7L/ATG7, transferred to ATG3 and conjugated to phospholipid to form the membrane-bound form, LC3-II.

Cleaved LC3A Antibody - References

References for protein:
1.Baehrecke EH. Nat Rev Mol Cell Biol. 6(6):505-10. (2005)
2.Lum JJ, et al. Nat Rev Mol Cell Biol. 6(6):439-48. (2005)
3.Greenberg JT. Dev Cell. 8(6):799-801. (2005)
4. Levine B. Cell. 120(2):159-62. (2005)
5.Shintani T and Klionsky DJ. Science. 306(5698):990-5. (2004)
6.Tanida I., et al. Int. J. Biochem. Cell Biol. 36:2503-2518(2004)
7.He H., et al. J. Biol. Chem. 278:29278-29287(2003)
8.Tanida I., et al. J. Biol. Chem. 279:36268-36276(2004)
References for U251 cell line:
1. Westermark B.; Pontén J.; Hugosson R. (1973).” Determinants for the establishment of permanent tissue culture lines from human gliomas”. Acta Pathol Microbiol Scand A. 81:791-805. [PMID: 4359449].
2. Pontén, J.,Westermark B. (1978).” Properties of Human Malignant Glioma Cells in Vitro”. Medical Biology 56: 184-193.[PMID: 359950].
3. Geng Y.;Kohli L.; Klocke B.J.; Roth K.A.(2010). “Chloroquine-induced autophagic vacuole accumulation and cell death in glioma cells is p53 independent”. Neuro Oncol. 12(5): 473–481.[

PMID: 20406898].