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LC3A (Cleaved) Antibody
Rabbit Polyclonal Antibody
Catalog # ABV11458

Specification

LC3A (Cleaved) Antibody - Product Information

Application	**IF, IHC, WB**
Primary Accession	Q9H492
Reactivity	**Human**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit Ig**
Calculated MW	**14272**

LC3A (Cleaved) Antibody - Additional Information

Gene ID 84557

Positive Control	**WB: mouse brain lysate, IHC: human cancer tissue, IF: U251 cells**
Application & Usage	**WB: 1:1000, IF: 1:100, IHC: 1:10-50, ICC: 1:10-50**

Other Names
MAP1LC3A; 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; Microtubule-associated protein 1 light chain 3 alpha

Target/Specificity
LC3

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
Supplied in PBS with 0.09% (W/V) sodium azide.

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
LC3A (Cleaved) Antibody is for research use only and not for use in diagnostic or therapeutic

procedures.

LC3A (Cleaved) 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.

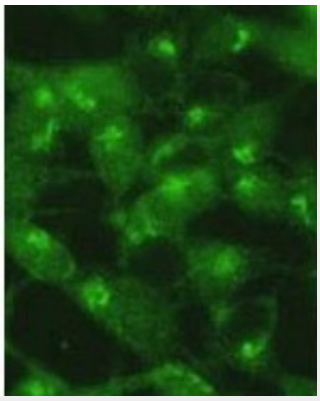
Tissue Location
Most abundant in heart, brain, liver, skeletal muscle and testis but absent in thymus and peripheral blood leukocytes

LC3A (Cleaved) Antibody - Protocols

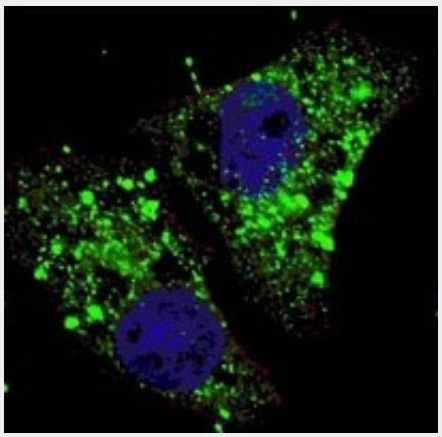
Provided below are standard protocols that you may find useful for product applications.

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

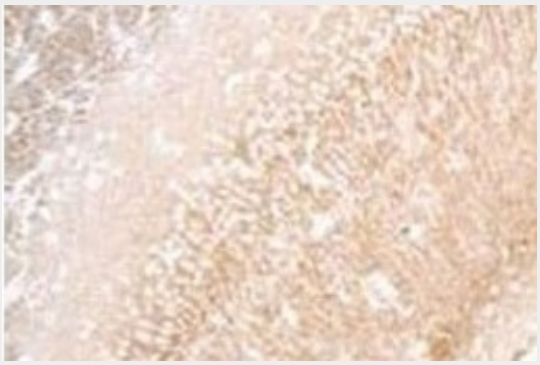
LC3A (Cleaved) Antibody - Images



5Y cells were pretreated with 5nM bafilomycin for 24hr and fixed in 4% of paraformaldehyde. Treatment with the LC3 antibody at dilution 1:100. Data courtesy of Jianhui Zhu, MD, PhD & Charleen T. Chu, MD, PhD, University of Pittsburgh School of Medicine.

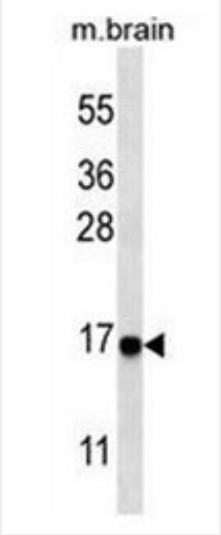


Fluorescent image of U251 cells stained with cleaved LC3A antibody. U251 cells were treated with Chloroquine (50 µM,16h), then fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with cleaved LC3A primary antibody (1:100, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 µg/ml, 5 min). LC3 immunoreactivity is localized to autophagic vacuoles in the cytoplasm of U251 cells.



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

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Western blot analysis of anti-cleaved-LC3 (APG8a) Pab in mouse brain tissue lysate. Cleaved-LC3 (APG8a) was detected using the purified Pab.

LC3A (Cleaved) Antibody - Background

Autophagy is an alternative process of proteasomal degradation for some long-lived proteins or organelles. Alterations in the autophagic-lysosomal compartment have been linked to neuronal death in many neurodegenerative disorders as well as in transmissible neuronal pathologies (prion diseases). Genetic studies in yeast have shown that Autophagy-defective Gene-8 (Atg-8) represents a specific marker for autophagy. Among the four families of mammalian Atg8-related proteins only LC3 (Microtubule-associated Protein1 Light Chain 3) is expressed at sufficient high levels and efficiently recruited to autophagic vesicles in cells and tissues. During autophagy the cytoplasmic form, LC3-I is processed and recruited to autophagosomes, where LC3-II is generated by site specific proteolysis near to the C-terminus. Autophagic vacuoles have been also reported frequently in cardiomyopathies or muscle cells exposed to different experimental settings.