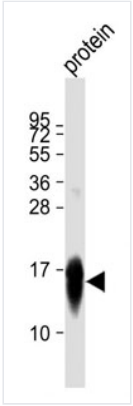
MAP1LC3A Antibody – Mouse Monoclonal

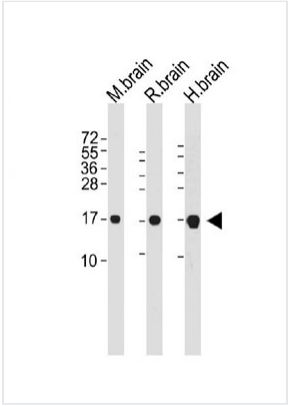
PRODUCT OVERVIEW

Product Name	LC3 (MAP1LC3A), Monoclonal Antibody
Full Product Name	LC3 Antibody (APG8)
Product Gene Name	anti-MAP1LC3A antibody
Product Synonym 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
Clonality	Monoclonal
Isotype	Mouse IgG1 k
Host	Mouse
Species Reactivity	Human, mouse, rat
Form/Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide.
Purity/Purification	This antibody is purified through a protein G column, followed by dialysis against PBS.
Specificity	This LC3 antibody is generated from mouse immunized with a full length recombinant protein of human LC3 (APG8).
Preparation and 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.
Antibody/Peptide Pairs	LC3 (APG8A) peptide (MBS9223036) is used for blocking the activity of LC3 Clone #166AT1234 antibody (MBS9200215)
OMIM	601242
3D Structure	ModBase 3D Structure for Q9H492
Product Categories/Family for anti-MAP1LC3A antibody	Signal Transduction; Neuroscience; Microbiology; Metabolism; Cell Biology; Cardiovascular; Cancer; Autophagy
Applications Tested/Suitable for anti-MAP1LC3A antibody	Western Blot (WB), ELISA (EIA)
Application Notes for anti-MAP1LC3A antibody	WB~~1:8000
Related Product Information for anti-MAP1LC3A antibody	MAP1A and MAP1B are microtubule-associated proteins which mediate the physical interactions between microtubules and components of the cytoskeleton. MAP1A and MAP1B each consist of a heavy chain subunit and multiple light chain subunits. The protein encoded by this gene is one of the light chain subunits and can associate with either MAP1A or MAP1B. Two transcript variants encoding different isoforms have been found for this gene.

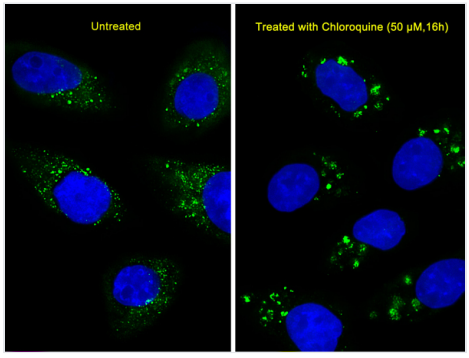
Product References and Citations for anti-MAP1LC3A antibody	References for protein: 1.Autophagy negatively regulates Wnt signalling by promoting Dishevelled degradation. Gao C, et al. Nat Cell Biol, 2010 Aug. PMID 20639871. 2.The prolyl isomerase Pin1 induces LC-3 expression and mediates tamoxifen resistance in breast cancer. Namgoong GM, et al. J Biol Chem, 2010 Jul 30. PMID 20479004. 3.Protein kinase C inhibits autophagy and phosphorylates LC3. Jiang H, et al. Biochem Biophys Res Commun, 2010 May 14. PMID 20398630. 4. Processing of autophagic protein LC3 by the 20S proteasome. Gao Z, et al. Autophagy, 2010 Jan. PMID 20061800. 5.Defective autophagy associated with LC3 puncta in epothilone-resistant cancer cells. Shen S, et al. Cell Cycle, 2010 Jan 15. PMID 20023420. 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].
Other Notes	Small volumes of anti-MAP1LC3A antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for MAP1LC3A purchase	MBS9200215 is an antibody targeting MAP1LC3A. Also known as LC3 Antibody (APG8). Reactive in Human, mouse, rat. Host: Mouse.



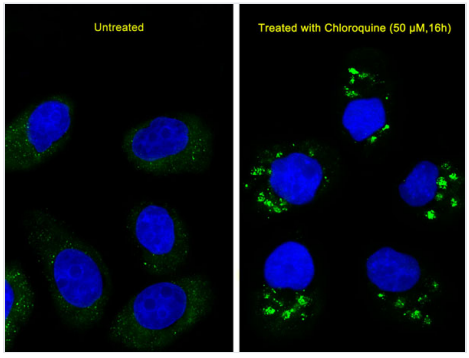
Western Blot (WB) of anti-MAP1LC3A antibody
Anti-MAP1LC3A Antibody at 1:5000 dilution + recombinant protein Lysates/proteins at 20 ug per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 14 kDa. Blocking/Dilution buffer: 5% NFDM/TBST.



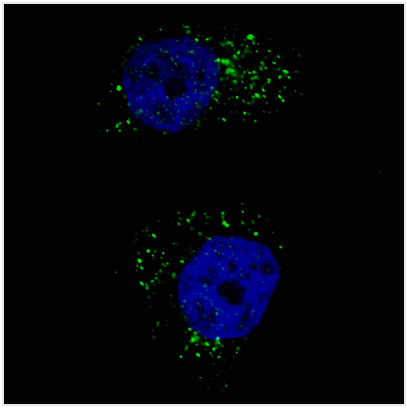
Western Blot (WB) of anti-MAP1LC3A antibody
All lanes : Anti-MAP1LC3A Antibody at dilutionLane 1: Mouse brain whole cell lysateLane 2:Rat brain whole cell lysateLane 3: Human brain whole cell lysateLysates/proteins at 20 ug per lane.Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 14 kDaBlocking/Dilution buffer: 5% NFDM/TBST.



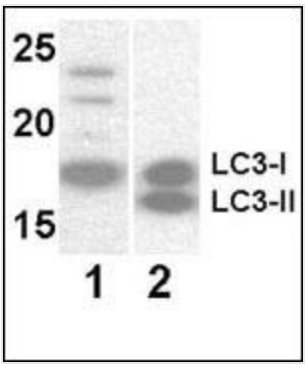
Immunofluorescence (IF) of anti-MAP1LC3A antibody
Immunofluorescent analysis of U251 cells, using LC3 Antibody (APG8). U251 cells(right) were treated with Chloroquine (50 uM,16h). MBS9200215 was diluted at 1:25 dilution. Dylight Fluor 488-conjugated goat anti-mouse IgG at 1:400 dilution was used as the secondary antibody (green). DAPI was used to stain the cell nuclear (blue).



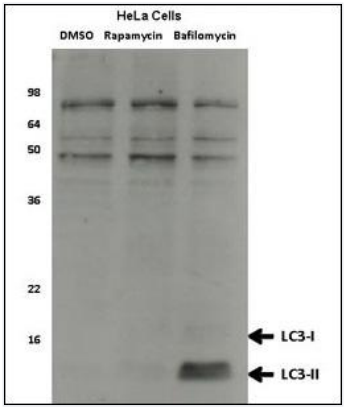
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Immunofluorescent analysis of U251 cells, using LC3 Antibody (APG8). U251 cells(right) were treated with Chloroquine (50 uM,16h). MBS9200215 was diluted at 1:25 dilution. Dylight Fluor 488-conjugated goat anti-mouse IgG at 1:400 dilution was used as the secondary antibody (green). DAPI was used to stain the cell nuclear (blue).



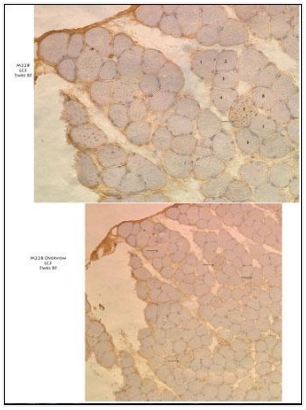
Immunofluorescence (IF) of anti-MAP1LC3A antibody
Fluorescent image of U251 cells stained with MBS9200215 LC3 (APG8) antibody.U251 cells were treated with Chloroquine (50 uM,16h), then fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with MBS9200215 LC3 (APG8) primary antibody (1:200, 2 h at room temperature). For secondary antibody, Alexa Fluor 488 conjugated donkey anti-mouse antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 ug/ml, 5 min). LC3 immunoreactivity is localized to autophagic vacuoles in the cytoplasm of U251 cells.



Western Blot (WB) of anti-MAP1LC3A antibody
Western blot analysis of anti-LC3 Mab at 8 ug/ml. Lane 1: Y79 (soluble fraction of cell extract); Lane 2: 293 transfected with human LC3 (whole cell extract).



Western Blot (WB) of anti-MAP1LC3A antibody
Western blot analysis of anti-LC3 Mab Hela cell lysates, which were treated with rapamycin or bafilomycin overnight. Data courtesy of Dr. David Rubinsztein, Cambridge Institute for Medical Research.



Immunohistochemistry (IHC) of anti-MAP1LC3A antibody
10X(lower panel) and 20X (upper panel) immunohistochemistry images from muscle tissue of a diseased mouse off Dox after 5 weeks on regular food. Several fibers that have autophagic vesicles throughout are visible. Primary antibody used is. Data courtesy of Dr. Christy Caudill, Cincinnati Children's Hospital Medical Center.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for MAP1LC3A. It may not necessarily be applicable to this product.

NCBI GI #	14210522
NCBI GeneID	84557
NCBI Accession #	NP_115903.1
NCBI Related Accession #	NP_852610.1
UniProt Primary Accession #	Q9H492
UniProt Secondary Accession #	Q9BXW5; E1P5P4; E1P5P5
UniProt Related Accession #	Q9H492
GenBank Nucleotide #	NM_032514.3
NCBI Official Full Name	microtubule-associated proteins 1A/1B light chain 3A isoform a
NCBI Official Synonym Full Names	microtubule-associated protein 1 light chain 3 alpha
NCBI Official Symbol	MAP1LC3A

NCBI Official Synonym Symbols	LC3; LC3A; ATG8E; MAP1ALC3; MAP1BLC3
UniProt Protein Name	Microtubule-associated proteins 1A/1B light chain 3A
UniProt Synonym Protein Names	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
Protein Family	Microtubule-associated protein
UniProt Gene Name	MAP1LC3A
UniProt Synonym Gene Names	MAP1A/MAP1B LC3 A
UniProt Entry Name	MLP3A_HUMAN
NCBI Protein Information	microtubule-associated proteins 1A/1B light chain 3A
NCBI Summary for MAP1LC3A	MAP1A and MAP1B are microtubule-associated proteins which mediate the physical interactions between microtubules and components of the cytoskeleton. MAP1A and MAP1B each consist of a heavy chain subunit and multiple light chain subunits. The protein encoded by this gene is one of the light chain subunits and can associate with either MAP1A or MAP1B. Two transcript variants encoding different isoforms have been found for this gene. The expression of variant 1 is suppressed in many tumor cell lines, suggesting that may be involved in carcinogenesis. [provided by RefSeq, Feb 2012]
UniProt Comments for MAP1LC3A	LC3A: is a ubiquitin-like protein that is a constituent of the ATG8-conjugation system, one of two evolutionarily conserved phosphatidylethanolamine conjugation systems necessary for the formation of the autophagosome. The human ATG8 system includes seven ubiquitin-like light chain proteins (LCPs) that are homologs of yeast LC3: MAP1LC3A, -B, -C, GABARAP, GABARAPL1, -2, and -3. Pro-LCPs are cleaved by ATG4B to expose a C-terminal glycine residue, the cytosolic LCP-I form. The exposed C-terminus is conjugated to the head group amine of phosphatidylethanolamine (PE) through an amide bond by a sequence of ubiquitination-like reactions that involves an E1 (ATG7), an E2 (ATG3), and an E3 (a complex including ATG5, ATG12, and ATG16L). The PE-congugated form (LCP-II) is tightly associated with the autophagosomal membrane. The LCP-II forms can also be delipidated by the ATG4 proteases: most of the LCPs are delipidated and liberated from the membrane before autophagosomes fuse with lysosomes. Two isoforms of the human protein are produced by alternative splicing. Protein type: Microtubule-binding; Ubiquitin-like modifier; Vesicle; Autophagy Chromosomal Location of Human Ortholog: 20q11.22 Cellular Component: microtubule; extrinsic to membrane; late endosome; autophagic vacuole; cytoplasmic vesicle; cytosol Molecular Function: protein binding; phosphatidylethanolamine binding; microtubule binding; GABA receptor binding; phospholipid binding Biological Process: mitochondrion degradation; autophagic vacuole formation; cellular response to nitrogen starvation
Research Articles on MAP1LC3A	**1.** A significant association of LC3 expression with disease progression including a large tumor size, higher stage, and worse prognosis of hepatocellular carcinoma.
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