

## LC3 Antibody (APG8B) (N-term)

Purified Rabbit Polyclonal Antibody (Pab)  
 Catalog # AP1802a-400 □

### Specification

#### LC3 Antibody (APG8B) (N-term) - Product info

Application	WB, IF
Primary Accession	<a href="#">Q9GZQ8</a>
Other Accession	<a href="#">A6NCE7</a> , <a href="#">Q41515</a>
Reactivity	Human, Mouse, Rat
Predicted	Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit Ig

#### LC3 Antibody (APG8B) (N-term) - Additional info

Gene ID 81631

#### Other Names

Microtubule-associated proteins 1A/1B light chain 3B,  
 Autophagy-related protein LC3 B, Autophagy-related  
 ubiquitin-like modifier LC3 B, MAP1 light chain 3-like protein 2,  
 MAP1A/MAP1B light chain 3 B, MAP1A/MAP1B LC3 B,  
 Microtubule-associated protein 1 light chain 3 beta, MAP1LC3B,  
 MAP1ALC3

#### Target/Specificity

This LC3 antibody is generated from rabbits immunized with a  
 KLH conjugated synthetic peptide between 1-30 amino acids  
 from the N-terminal region of human LC3.

#### Dilution

WB~~1:1000

IF~~1:100

#### Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V)  
 sodium azide. This antibody is prepared by Saturated  
 Ammonium Sulfate (SAS) precipitation followed by dialysis  
 against PBS.

#### 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.

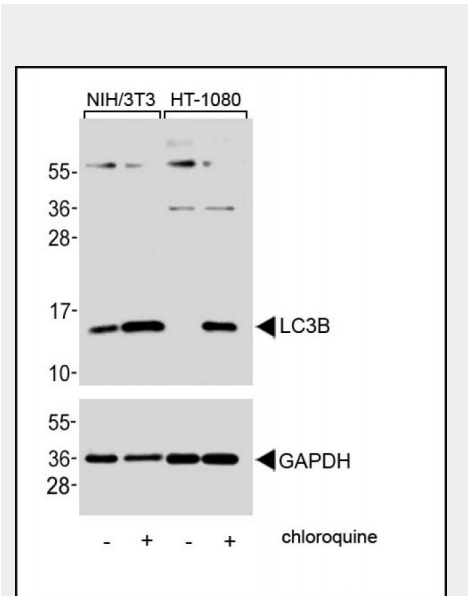
#### Precautions

LC3 Antibody (APG8B) (N-term) is for research use only and not  
 for use in diagnostic or therapeutic procedures.

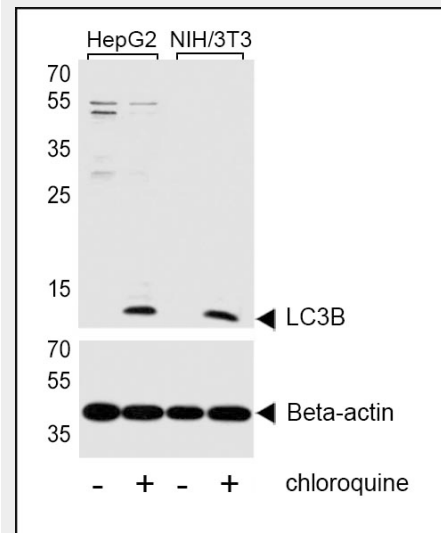
#### LC3 Antibody (APG8B) (N-term) - Protein Information

Name MAP1LC3B

Synonyms MAP1ALC3



Western blot analysis of lysates from  
 NIH/3T3, HT-1080 cell line, untreated or  
 treated with chloroquine, 50µM, using  
 LC3 Antibody (APG8B) (Cat.  
 #AP1802a)(upper) or GAPDH(lower).



Western blot analysis of lysates from  
 HepG2, mouse NIH/3T3 cell line,  
 untreated or treated with chloroquine,  
 50uM, using LC3 Antibody (APG8B)  
 (N-term)(Cat. #AP1802a)(upper) or  
 Beta-actin (lower).

## Function

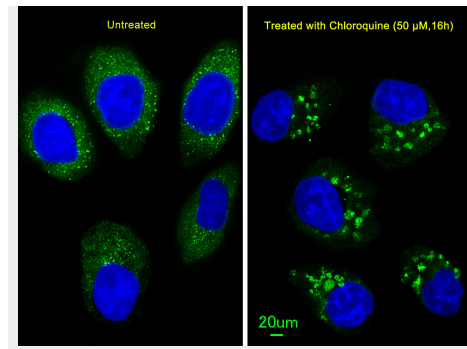
Ubiquitin-like modifier involved in formation of autophagosomal vacuoles (autophagosomes). Plays a role in mitophagy which contributes to regulate mitochondrial quantity and quality by eliminating the mitochondria to a basal level to fulfill cellular energy requirements and preventing excess ROS production. Whereas LC3s are involved in elongation of the phagophore membrane, the GABARAP/GATE-16 subfamily is essential for a later stage in autophagosome maturation. Promotes primary ciliogenesis by removing OFD1 from centriolar satellites via the autophagic pathway.

## Cellular Location

Cytoplasm, cytoskeleton. Endomembrane system; Lipid-anchor. Cytoplasmic vesicle, autophagosome membrane; Lipid-anchor. Note=LC3-II binds to the autophagic membranes Localizes also to discrete punctae along the ciliary axoneme (By similarity).

## Tissue Location

Most abundant in heart, brain, skeletal muscle and testis. Little expression observed in liver



Immunofluorescent analysis of U251 cells, using LC3 Antibody (APG8B) (N-term)(Cat. #AP1802a). U251 cells(right) were treated with Chloroquine (50  $\mu$ M, 16h). AP1802a was diluted at 1:100 dilution. Alexa Fluor 488-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody (green). DAPI was used to stain the cell nuclear (blue).

## LC3 Antibody (APG8B) (N-term) - Protocols

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

- [□ Western Blot](#)
- [□ Blocking Peptides](#)
- [□ Dot Blot](#)
- [□ Immunohistochemistry](#)
- [□ Immunofluorescence](#)
- [□ Immunoprecipitation](#)
- [□ Flow Cytometry](#)
- [□ Cell Culture](#)

## LC3 Antibody (APG8B) (N-term) - 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. MAP1LC3b 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.

## LC3 Antibody (APG8B) (N-term) - 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].

LC3 Antibody (APG8B) (N-term) - Citations

- [Inhibition of Isoprenylcysteine carboxylmethyltransferase induces cell cycle arrest and apoptosis through p21 and p21-regulated BNIP3 induction in pancreatic cancer.](#)
- [Deletion of the BH3-only protein Noxa alters electrographic seizures but does not protect against hippocampal damage after status epilepticus in mice.](#)
- [Disruption of endolysosomal trafficking pathways in glioma cells by methuosis-inducing indole-based chalcones.](#)
- [Ghrelin protects small intestinal epithelium against sepsis-induced injury by enhancing the autophagy of intestinal epithelial cells.](#)
- [Low expression of MAP1LC3B, associated with low Beclin-1, predicts lymph node metastasis and poor prognosis of gastric cancer.](#)
- [The autophagy pathway participates in resistance to tomato yellow leaf curl virus infection in whiteflies.](#)
- [Exocytosis of varicella-zoster virions involves a convergence of endosomal and autophagy pathways.](#)
- [Combination of the novel histone deacetylase inhibitor YCW1 and radiation induces autophagic cell death through the downregulation of BNIP3 in triple-negative breast cancer cells in vitro and in an orthotopic mouse model.](#)
- [Autophagy generates citrullinated peptides in human synoviocytes: a possible trigger for anti-citrullinated peptide antibodies.](#)
- [IKK \$\beta\$ /NF \$\kappa\$ Bp65 activated by interleukin-13 targets the autophagy-related genes LC3B and beclin 1 in fibroblasts co-cultured with breast cancer cells.](#)
- [Iron mitigates DMT1-mediated manganese cytotoxicity via the ASK1-JNK signaling axis: Implications of iron supplementation for manganese toxicity.](#)
- [Far-infrared promotes burn wound healing by suppressing NLRP3 inflammasome caused by enhanced autophagy.](#)
- [Effect of hydroxychloroquine and characterization of autophagy in a mouse model of endometriosis.](#)
- [A mutation in the Warburg syndrome gene, RAB3GAP1, causes a similar syndrome with polyneuropathy and neuronal vacuolation in Black Russian Terrier dogs.](#)
- [Antiretrovirals, Methamphetamine, and HIV-1 Envelope Protein gp120 Compromise Neuronal Energy Homeostasis in Association with Various Degrees of Synaptic and Neuritic Damage.](#)
- [Lipoxin A4 methyl ester alleviates vascular cognition impairment by regulating the expression of proteins related to autophagy and ER stress in the rat hippocampus.](#)
- [LC3B globular structures correlate with survival in esophageal adenocarcinoma.](#)
- [Upregulation of cell surface estrogen receptor alpha is associated with the mitogen-activated protein kinase/extracellular signal-regulated kinase activity and promotes autophagy maturation.](#)
- [Transcription factor IKZF1 is degraded during apoptosis of multiple myeloma cells induced by kinase inhibition.](#)
- [Activation of autophagy in rat brain cells following focal cerebral ischemia reperfusion through enhanced expression of Atg1/pULK and LC3.](#)
- [Identification of thioridazine, an antipsychotic drug, as an antiglioblastoma and anticancer stem cell agent using public gene expression data.](#)
- [Myocardin is required for maintenance of vascular and visceral smooth muscle homeostasis during postnatal development.](#)
- [Requirement for autophagy in the long-term persistence but not initial formation of memory B cells.](#)
- [Effect of pantoprazole to enhance activity of docetaxel against human tumour xenografts by inhibiting autophagy.](#)
- [X-linked myotubular myopathy in Rottweiler dogs is caused by a missense mutation in Exon 11 of the MTM1 gene.](#)
- [Neutrophils counteract autophagy-mediated anti-inflammatory mechanisms in alveolar macrophage: role in posthemorrhagic shock acute lung inflammation.](#)
- [\(+\)-Epogymnolactam, a novel autophagy inducer from mycelial culture of \*Gymnopus\* sp.](#)
- [Inhibition of Intracellular Clusterin Attenuates Cell Death in Nephropathic Cystinosis.](#)
- [Changes in microtubule-related proteins and autophagy in long-term vitamin E-deficient mice.](#)
- [Phospholipase D2 mediates survival signaling through direct regulation of Akt in glioblastoma cells.](#)
- [Hydroquinone induces oxidative and mitochondrial damage to human retinal M \$\mu\$ ller cells \(MIO-M1\).](#)
- [Dengue virus infection induces autophagy: an in vivo study.](#)
- [4-Hydroxytamoxifen induces autophagic death through K-Ras degradation.](#)
- [Mutant tristetraprolin: a potent inhibitor of malignant glioma cell growth.](#)
- [Induction of autophagy by Imatinib sequesters Bcr-Abl in autophagosomes and down-regulates Bcr-Abl](#)

protein.

- [Detection of the HIV-1 minus-strand-encoded antisense protein and its association with autophagy.](#)
- [Impaired autophagy by soluble endoglin, under physiological hypoxia in early pregnant period, is involved in poor placentation in preeclampsia.](#)
- [Benzyl isothiocyanate induces protective autophagy in human prostate cancer cells via inhibition of mTOR signaling.](#)
- [Chronic autophagy is a cellular adaptation to tumor acidic pH microenvironments.](#)
- [HDAC5 is required for maintenance of pericentric heterochromatin, and controls cell-cycle progression and survival of human cancer cells.](#)
- [Caspase-6 activity in a BACHD mouse modulates steady-state levels of mutant huntingtin protein but is not necessary for production of a 586 amino acid proteolytic fragment.](#)
- [Janus-faced liposomes enhance antimicrobial innate immune response in Mycobacterium tuberculosis infection.](#)
- [Increased hippocampal accumulation of autophagosomes predicts short-term recognition memory impairment in aged mice.](#)
- [Tocotrienols prevent hydrogen peroxide-induced axon and dendrite degeneration in cerebellar granule cells.](#)
- [Beclin 1 knockdown inhibits autophagic activation and prevents the secondary neurodegenerative damage in the ipsilateral thalamus following focal cerebral infarction.](#)
- [Cell killing and radiosensitizing effects of atorvastatin in PC3 prostate cancer cells.](#)
- [Ras-related tumorigenesis is suppressed by BNIP3-mediated autophagy through inhibition of cell proliferation.](#)
- [Rab5 and class III phosphoinositide 3-kinase Vps34 are involved in hepatitis C virus NS4B-induced autophagy.](#)
- [Autophagy activation is involved in neuroprotection induced by hyperbaric oxygen preconditioning against focal cerebral ischemia in rats.](#)
- [A rapid method to improve protein detection by indirect ELISA.](#)
- [Involvement of autophagy in oncogenic K-Ras-induced malignant cell transformation.](#)
- [Influence of Hsp90 and HDAC inhibition and tubulin acetylation on perinuclear protein aggregation in human retinal pigment epithelial cells.](#)
- [Macroautophagy is defective in mucolipin-1-deficient mouse neurons.](#)
- [Invasion and multiplication of Helicobacter pylori in gastric epithelial cells and implications for antibiotic resistance.](#)
- [PI3K/p110 \$\delta\$  is a novel therapeutic target in multiple myeloma.](#)
- [p62/sequestosome 1 as a regulator of proteasome inhibitor-induced autophagy in human retinal pigment epithelial cells.](#)
- [A novel quantitative flow cytometry-based assay for autophagy.](#)
- [A highly toxic cellular prion protein induces a novel, nonapoptotic form of neuronal death.](#)
- [ISG20L1 is a p53 family target gene that modulates genotoxic stress-induced autophagy.](#)
- [Lysosome dysfunction triggers Atg7-dependent neural apoptosis.](#)
- [Combination treatment with arsenic trioxide and irradiation enhances cell-killing effects in human fibrosarcoma cells in vitro and in vivo through induction of both autophagy and apoptosis.](#)
- [The IKK complex contributes to the induction of autophagy.](#)
- [NOD2 stimulation induces autophagy in dendritic cells influencing bacterial handling and antigen presentation.](#)
- [Lysosomal degradation of endocytosed proteins depends on the chloride transport protein ClC-7.](#)
- [Maintenance of HCT116 colon cancer cell line conforms to a stochastic model but not a cancer stem cell model.](#)
- [Adenovirus RID-alpha activates an autonomous cholesterol regulatory mechanism that rescues defects linked to Niemann-Pick disease type C.](#)
- [The stent-eluting drugs sirolimus and paclitaxel suppress healing of the endothelium by induction of autophagy.](#)
- [Insulin-like growth factor-I prevents the accumulation of autophagic vesicles and cell death in Purkinje neurons by increasing the rate of autophagosome-to-lysosome fusion and degradation.](#)
- [Radiation sensitization of glioblastoma by cilengitide has unanticipated schedule-dependency.](#)
- [Autophagy enhances the presentation of endogenous viral antigens on MHC class I molecules during HSV-1 infection.](#)
- [Melatonin attenuates methamphetamine-induced deactivation of the mammalian target of rapamycin signaling to induce autophagy in SK-N-SH cells.](#)
- [Active ras triggers death in glioblastoma cells through hyperstimulation of macropinocytosis.](#)
- [Changes in autophagy after traumatic brain injury.](#)
- [Autophagy is disrupted in a knock-in mouse model of juvenile neuronal ceroid lipofuscinosis.](#)