

Product datasheet for **TA336735**

MAP1LC3A Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	FC, ICC/IF, IHC, Simple Western, WB
Recommended Dilution:	Immunohistochemistry-Frozen, Flow Cytometry: 1:100, Immunocytochemistry/Immunofluorescence: 1:100, Western Blot: 1:2500, Simple Western: 1:40, Immunohistochemistry: 1:100 - 1:400, Immunohistochemistry-Paraffin: 1:100 - 1:400
Reactivity:	Human, Mouse, Rat, Bovine, Zebrafish
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Genomic sequence made to an N-terminal portion of the human LC3A protein [Swiss-Prot# Q9H492].
Formulation:	PBS, 0.05% Sodium Azide. Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Concentration:	lot specific
Purification:	Immunogen affinity purified
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Predicted Protein Size:	14 kDa
Gene Name:	microtubule associated protein 1 light chain 3 alpha
Database Link:	NP_115903 Entrez Gene 66734 MouseEntrez Gene 362245 RatEntrez Gene 84557 Human Q9H492



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Background:

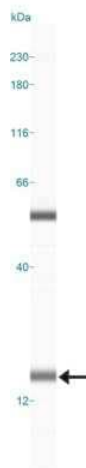
LC3 (microtubule-associated protein light chain 3), the most studied autophagy biomarker, was originally identified as a subunit of microtubule-associated proteins 1A and 1B (MAP1LC3) and was later found to contain similarity to yeast protein Apg8/Aut7/Cvt5. Distributed ubiquitously in eukaryotes, LC3 is expressed as 3 splice variants/isoforms (LC3A, LC3B and LC3C) which undergo post-translational processing, wherein, the unprocessed form of LC3 is proteolytically cleaved by Atg4 protease to form LC3-I with carboxyterminal exposed glycine. During autophagy, this exposed glycine of LC3-I is conjugated by Atg7 (an E1-like activity), Atg3 (an E2-like conjugating activity) and by Atg12-Atg5-Atg16L multimers (E3-like ligase activity) to phosphatidylethanolamine (PE) moiety for generating LC3-II. The lipophilic character of PE group facilitates LC3-II insertion into autophagosomes membranes, and as a result LC3-II is degraded when autophagosomes fuse with lysosomes to form autolysosomes for lysis of intra-autophagosomal components by lysosomal hydrolases. Conversion of LC3I to LC3II when correlated with autophagosome numbers is considered as the best marker of autophagy because LC3-II is the only well-characterized protein which specifically localizes to autophagic structures throughout autophagy (from phagophore to lysosomal degradation). LC3 is a great tool in research as autophagy is implicated in numerous physiological/pathological processes including responses to exercise/aging, cancer, metabolic and neurodegenerative disorders, and cardiovascular/pulmonary diseases.

Synonyms:

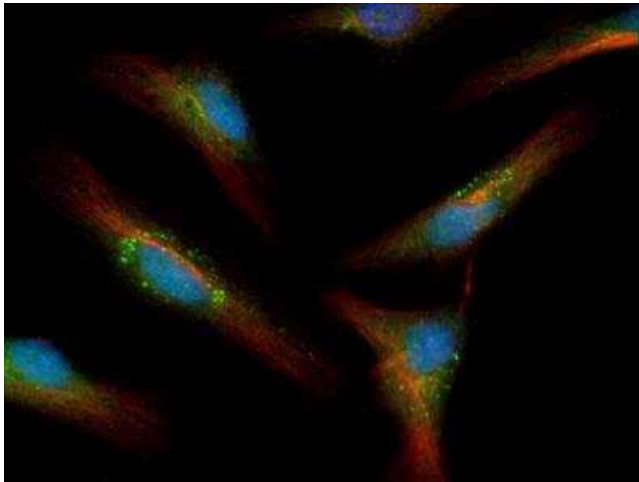
ATG8E; LC3; LC3A; MAP1ALC3; MAP1BLC3

Note:

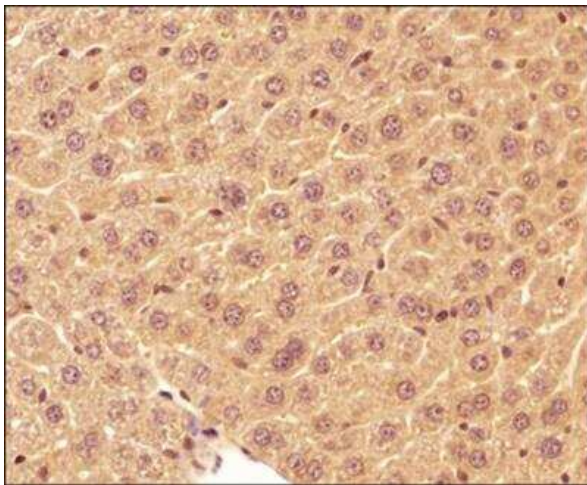
This LC3 antibody is useful for Immunohistochemistry, Immunocytochemistry/Immunofluorescence, Flow Cytometry and Western blot. In WB a band is seen at ~14 kDa. IHC was done on formalin fixed paraffin embedded sections. In ICC/IF, autophagosome formation has been seen in HeLa cells after treatment with 50uM chloroquine. Use in Immunohistochemistry-Frozen reported in scientific literature (PMID: 23936035)

Product images:

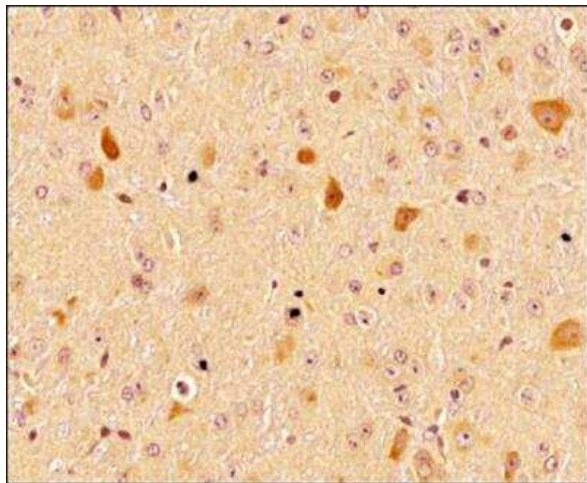
Simple Western: LC3A Antibody TA336735 - Image shows a specific band for LC3 in 0.5 mg/mL of Neuro2A lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.



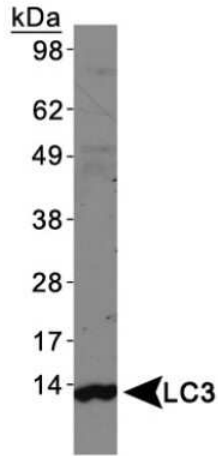
Immunocytochemistry/Immunofluorescence: LC3A Antibody TA336735 - LC3/MAP1 TA336735 - LC3 antibody was tested in HeLa cells with Dylight 488 (green). Cells were treated overnight with 50 uM chloroquine to induce autophagosome formation. Nuclei and alpha-tubulin were counterstained with DAPI (blue) and Dylight 550 (red).



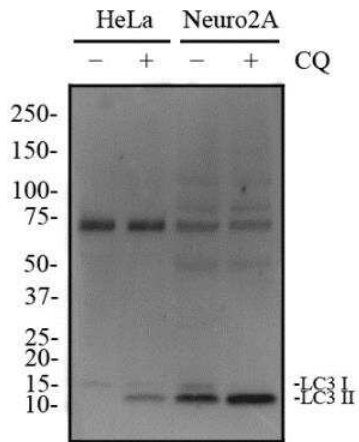
Immunohistochemistry-Paraffin: LC3A Antibody TA336735 - Analysis of a FFPE tissue section of mouse liver using LC3 antibody at 1:300 dilution. The signal was developed using HRP-labelled secondary antibody and DAB reagent, and the sections/nuclei were further counterstained with hematoxylin. Note the diffused cytoplasmic staining of LC3 in all of the hepatocytes and other liver cells.



Immunohistochemistry-Paraffin: LC3A Antibody TA336735 - Analysis of a FFPE tissue section of mouse brain using LC3 antibody at 1:300 dilution. The signal was developed using HRP-labelled secondary antibody and DAB reagent, and the sections/nuclei were further counterstained with hematoxylin. Note the diffused cytoplasmic staining of LC3 in all of the cells with highest positivity in various neurons.



Western Blot: LC3/MAP1LC3A Antibody TA336735 - Human brain lysate.



Western Blot: LC3A Antibody TA336735 - Total protein from HeLa and Neuro2A cells treated with or without 50 uM chloroquine for 24 hours was separated on a 4-15% gel by SDS-PAGE, transferred to 0.2 um PVDF membrane and blocked in 5% non-fat milk in TBST. The membrane was probed with 2.0 ug/mL anti-LC3A in 1% non-fat milk in TBST and detected with an anti-rabbit HRP secondary antibody using chemiluminescence. Note the detection LC3 II upon chloroquine treatment.