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MAP1LC3B Antibody

Catalog # ASC11727

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9GZQ8
Other Accession	NP_073729, 12383056
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	14688
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	MAP1LC3B antibody can be used for detection of MAP1LC3B by Western blot at 1 - 2 □g/ml. Antibody can also be used for Immunohistochemistry starting at 5 □g/mL. For immunofluorescence start at 20 □g/mL.

Additional Information

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	MAP1LC3B; MAP1LC3B antibody is human, mouse and rat reactive. Multiple isoforms MAP1LC3B are known to exist. MAP1LC3B antibody is predicted to not cross-react with MAP1LC3A or MAP1LC3C
Reconstitution & Storage	MAP1LC3B antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	MAP1LC3B Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	MAP1LC3B (HGNC:13352)
Synonyms	MAP1ALC3
Function	Ubiquitin-like modifier involved in formation of autophagosomal vacuoles (autophagosomes) (PubMed:20418806, PubMed:23209295, PubMed:28017329). 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 (PubMed:23209295, PubMed:28017329). In response to cellular stress and upon mitochondria fission, binds C-18 ceramides and anchors autophagolysosomes to outer mitochondrial membranes to eliminate damaged mitochondria (PubMed:22922758). 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:20418806, PubMed:23209295, PubMed:28017329). Promotes primary ciliogenesis by removing OFD1 from centriolar satellites via the autophagic pathway (PubMed:24089205). 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:31006537, PubMed:31006538). Upon nutrient stress, directly recruits cofactor JMY to the phagophore membrane surfaces and promotes JMY's actin nucleation activity and autophagosome biogenesis during autophagy (PubMed:30420355).
Cellular Location	Cytoplasmic vesicle, autophagosome membrane; Lipid-anchor Endomembrane system; Lipid-anchor Mitochondrion membrane; Lipid-anchor. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:Q9CQV6}. Cytoplasmic vesicle. Note=LC3-II binds to the autophagic membranes. LC3-II localizes with the mitochondrial inner membrane during Parkin-mediated mitophagy (PubMed:28017329). Also localizes to discrete punctae along the ciliary axoneme
Tissue Location	Most abundant in heart, brain, skeletal muscle and testis. Little expression observed in liver

Background

Microtubule-associated proteins (MAPs) regulate microtubule stability and play critical roles in neuronal development and plasticity (1). MAP1LC3B belongs to the MAP1 LC3 family and it includes 3 different light chains, LC1, LC2 and LC3 (2). MAP1LC3B is involved in formation of autophagosomal vacuoles (autophagosomes) (3). It is most abundant in heart, brain, skeletal muscle and testis. MAP1LC3B is essential for autophagy and associated to the autophagosome membranes after processing (4).

References

Mandelkow E and Mandelkow EM. Microtubules and microtubule-associated proteins. Curr. Opin. Cell Biol. 1995; 7:72-81.

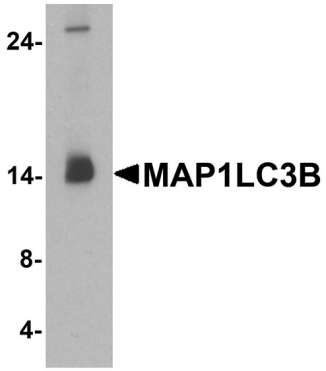
Fink JK, Jones SM, Esposito C, et al. Human microtubule-associated protein 1A (MAP1A) gene: genomic organization, cDNA sequence, and developmental and tissue-specific expression. Genomics 1996; 35:577-85.

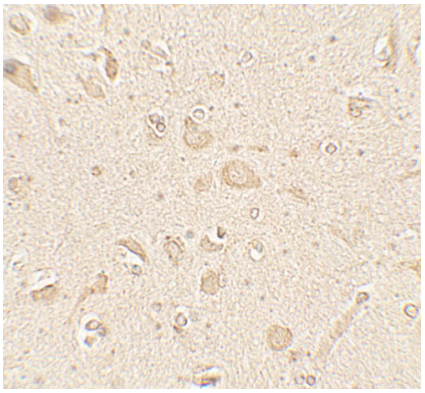
Colecchia D, Strambi A, Sanzone S, et al. MAPK15/ERK8 stimulates autophagy by interacting with LC3 and GABARAP proteins. Autophagy 2012; 8:1724-40.

Kabeya Y, Mizushima N, Ueno T, et al. LC3, a mammalian homolog of yeast Apg8p, is localized in autophagosome membrane after processing. EMBO J. 2000; 19:5720-8.

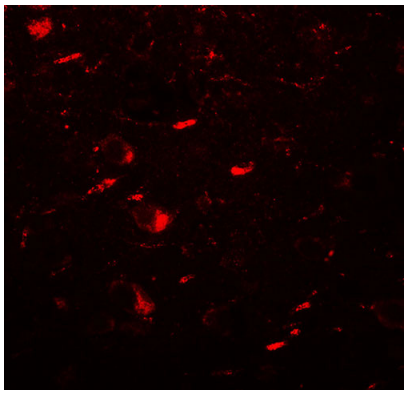
Images

Western blot analysis of MAP1LC3B in human brain tissue lysate with MAP1LC3B antibody at 1 µg/ml.





Immunohistochemistry of MAP1LC3B in human brain tissue with MAP1LC3B antibody at 5 µg/mL.



Immunofluorescence of MAP1LC3B in human brain tissue with MAP1LC3B antibody at 20 µg/mL.

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