10320 Camino Santa Fe, Suite G
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Phospho-LC3C(S12) Antibody
Rabbit Polyclonal Antibody
Catalog # ABV11462

Specification

Phospho-LC3C(S12) Antibody - Product Information

Application	**WB, DB**
Primary Accession	Q9GZQ8
Reactivity	**Human, Mouse, Rat, Bovine**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit Ig**
Calculated MW	**14688**

Phospho-LC3C(S12) Antibody - Additional Information

Gene ID 81631

Positive Control	**WB: SH-SY5Y cells, Dot blot: Phospho and non-phospho peptides**
Application & Usage	**WB: ~1:1000, DB: 1:500.**

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; 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
Phospho-LC3C(S12) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Phospho-LC3C(S12) Antibody - 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

Phospho-LC3C(S12) Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

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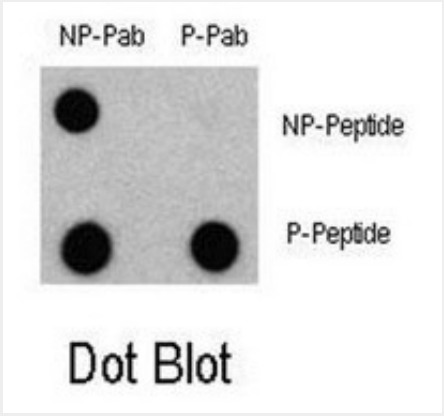
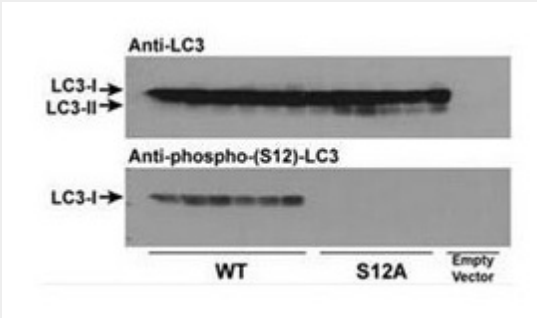
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

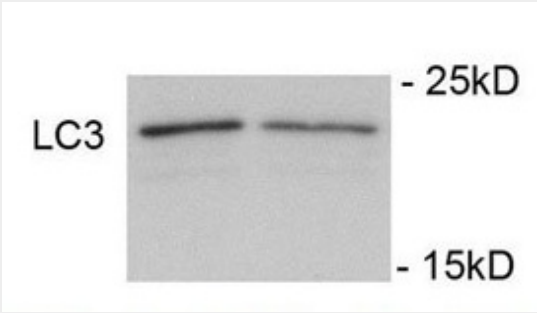
Phospho-LC3C(S12) Antibody - Images



Dot blot analysis of Phospho-LC3 (APG8a) - S12 Antibody and Nonphospho-LC3 (APG8a) Antibody on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.5 µg per ml.



Immunoblots of phosphorylated LC3 (phospho-LC3) in CHO cell culture. LC3 and LC3 S12A mutant vectors were transfected into CHO cells. The cell lysates were separated with SDS-PAGE and blotted with anti-phospho-LC3 S12 antibody. LC3 = microtubule-associated protein light chain-3; S12A = replacement of the amino acid position 12 serine of LC3 with alanine. WT = wildtype LC3-transfected cell lysates; S12A = LC3 S12A mutant-transfected cell lysates; Empty vector = vector with no LC3 gene. Molecular size: LC3-I = 16kDa, and LC3-II = 14 kDa



Immunoblots of SH-SY5Y cells treated with rapamycin for 1 h was probed with LC3 antibody. The data shows that treatment with rapamycin showed no significant change in level of LC3.

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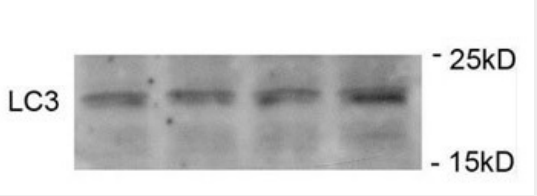

Immunoblots of SH-SY5Y cells treated with MPP+ for 24h was probed with LC3 antibody. The data shows that treatment with MPP+ showed no significant change in level of LC3.

Phospho-LC3C(S12) 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.