abcam

ab229327

Anti-LC3B antibody - N-terminal

Lab Essentials

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7 Preservative: 0.025% Proclin 300 Constituents: PBS, 20% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human MAP1LC3B. The exact immunogen used to generate this antibody is proprietary information. Database link Q9GZQ8
Purification technique	Affinity purification Immunogen
Concentration	0.34 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/100 - 1/500
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Cow, Chimpanzee, Zebrafish, Rhesus monkey, Medaka fish
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/50 - 1/200
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Cow, Chimpanzee, Zebrafish, Rhesus monkey, Medaka fish
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/500 - 1/3000

Notes	-

Species	Rat
Dilution info	1/500 - 1/3000
Notes	-

Species	Human
Dilution info	1/500 - 1/3000
Notes	-

Predicted

Species	Cow, Chimpanzee, Zebrafish, Rhesus monkey, Medaka fish
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/1000
Notes	-

Species	Rat
Dilution info	1/100 - 1/1000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Cow, Chimpanzee, Zebrafish, Rhesus monkey, Medaka fish
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100 - 1/1000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Cow, Chimpanzee, Zebrafish, Rhesus monkey, Medaka fish
Dilution info	-
Notes	-

Target data

See full target information MAP1LC3B

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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	LC3B also known as microtubule-associated protein 1 light chain 3 beta plays an important role in autophagy a process that maintains cellular homeostasis. The LC3B protein with a molecular weight of approximately 14 kDa undergoes lipidation to form LC3-II which associates with autophagosomal membranes. This protein expresses ubiquitously in various tissues including liver muscle and brain. Researchers often detect LC3B using techniques like LC3B western blot and LC3B immunofluorescence due to its function as a marker indicating autophagy levels.
Biological function summary	LC3B contributes significantly to the formation and maturation of autophagosomes. LC3B part of the autophagy-related protein complex binds to autophagic membranes. During this process LC3-I converts to LC3-II a lipid-phosphatidylethanolamine conjugate essential for autophagosome membrane expansion and closure. This mechanism helps remove damaged organelles and misfolded proteins from cells therefore contributing to cellular quality control.
Pathways	LC3B integrates into the autophagy pathway which is critical for cellular adaptive responses to stress. The mammalian target of rapamycin (mTOR) pathway regulates autophagy where mTOR inhibition activates LC3B promoting autophagosome formation. Moreover LC3B operates alongside other proteins like Beclin-1 and ULK1 facilitating the initiation and progression of autophagy under

	nutrient starvation conditions. These interactions highlight LC3's role in cellular energy balance and survival mechanisms.
Associated diseases and disorders	LC3B connects with conditions such as cancer and neurodegenerative diseases. Altered autophagy levels mediated by LC3B often associate with tumorigenesis where its dysregulation can affect cancer progression. Furthermore LC3B also links to neurodegenerative diseases like Alzheimer's where impaired autophagy disrupts neuronal function. LC3B interacts with proteins such as p62/SQSTM1 which affects protein aggregate clearance a critical factor in neurodegenerative pathology.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

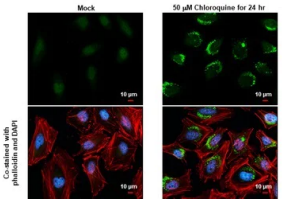
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

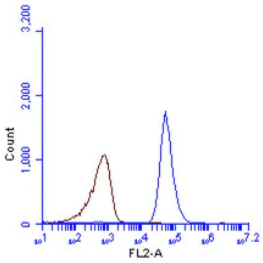
Full details and terms and conditions can be found here:
Terms & Conditions.

11 product images



Immunocytochemistry/ Immunofluorescence - Anti-LC3B antibody - N-terminal (ab229327)

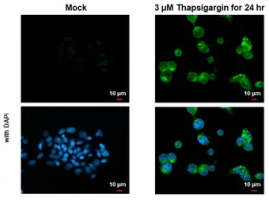
Immunofluorescence analysis of 4% paraformaldehyde fixed Mock and treated HeLa cells labelling LC3B protein at autophagosome with ab229327 at a 1/500 dilution at RT for 15 min (Green). Phalloidin, a cytoskeleton marker was used and diluted at 1/200 dilution. The nuclear counter stain is DAPI.
Scale bar= 10 µm.



Flow Cytometry - Anti-LC3B antibody - N-terminal (ab229327)

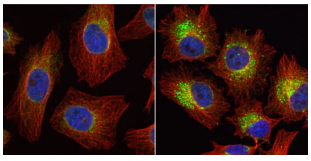
LC3B Flow Cytometry staining using rabbit Anti-LC3B antibody

Flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling LC3B with ab229327 at 1/100 dilution (blue) compared with an unlabelled sample (brown).
Acquisition of >20,000 events were collected using Argon ion laser (488nm) and 525/30 bandpass filter.



Immunocytochemistry/ Immunofluorescence - Anti-LC3B antibody - N-terminal (ab229327)

Immunofluorescence analysis of 4% paraformaldehyde fixed Mock and treated HepG2 cells labelling LC3B protein at vesicle with ab229327 at a 1/500 dilution at RT for 15 min (Green). Alpha Tubulin, a cytoskeleton marker, stained by alpha Tubulin antibody diluted at 1/1000 dilution (Red). The nuclear counter stain is DAPI (Blue).

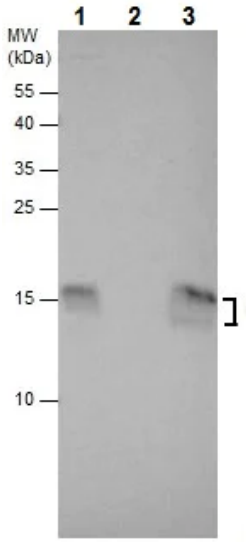


Immunocytochemistry/ Immunofluorescence - Anti-LC3B antibody - N-terminal (ab229327)

LC3B Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-LC3B antibody

4% paraformaldehyde-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cells, mock treated (left panel) or treated with 50 µM Chloroquine for 24 hr (right panel), stained for LC3B (green) using ab229327 at 1/2000 dilution in ICC/IF.
Red: alpha Tubulin, a cytoskeleton marker, stained by alpha Tubulin antibody at 1/1000 dilution.

Blue: Hoechst 33342 staining.



Immunoprecipitation - Anti-LC3B antibody - N-terminal (ab229327)

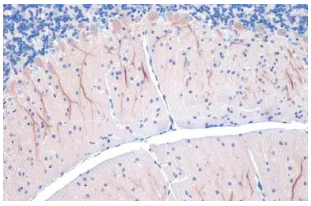
LC3B was immunoprecipitated from U-87 MG (human glioblastoma-astrocytoma epithelial cell line) whole cell extract (1 mg for IP, 20% of IP loaded) with 5 µg ab229327. Western blot was performed from the immunoprecipitate using ab229327. Anti-Rabbit IgG was used as a secondary reagent.
Lane 1: U-87 MG whole cell extract.

Lane 2: Control IgG IP in U-87 MG whole cell extract.

Lane 3: ab229327 IP in U-87 MG whole cell extract.

All lanes:
Immunoprecipitation - Anti-LC3B antibody - N-terminal (ab229327)

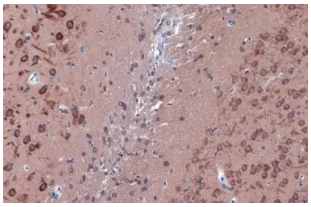
Predicted band size: 15 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody - N-terminal (ab229327)

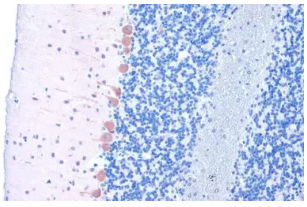
LC3B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse Cerebellum using rabbit Anti-LC3B antibody

Paraffin-embedded mouse cerebellum tissue stained for LC3B protein at cytoplasm with ab229327 at a 1/500 dilution in immunohistochemical analysis.
Antigen Retrieval: Citrate buffer, pH 6.0, 15 min



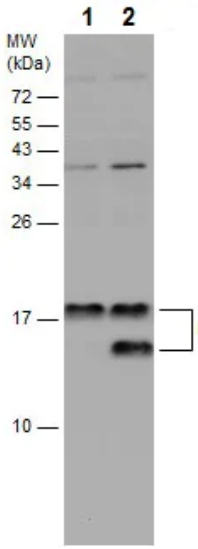
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody - N-terminal (ab229327)

Paraffin-embedded rat brain tissue stained for LC3B protein at cytoplasm with ab229327 at a 1/500 dilution in immunohistochemical analysis.
Antigen Retrieval: Citrate buffer, pH 6.0, 15 min



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody - N-terminal (ab229327)

Paraffin-embedded rat cerebellum tissue stained for LC3B protein at cytoplasm with ab229327 at a 1/500 dilution in immunohistochemical analysis.
Antigen Retrieval: Citrate buffer, pH 6.0, 15 min



Western blot - Anti-LC3B antibody - N-terminal (ab229327)

LC3B Western blot staining using rabbit Anti-LC3B antibody

15% SDS-PAGE gel.
All lanes:
Western blot - Anti-LC3B antibody - N-terminal (ab229327) at 1/2500 dilution

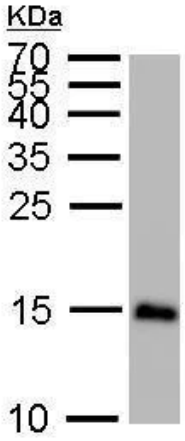
Lane 1:
Untreated HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell extract at 30 µg

Lane 2:
HeLa whole cell extract treated with 50µM Chloroquine for 24 hours at 30 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG

Predicted band size: 15 kDa



Western blot - Anti-LC3B antibody - N-terminal (ab229327)

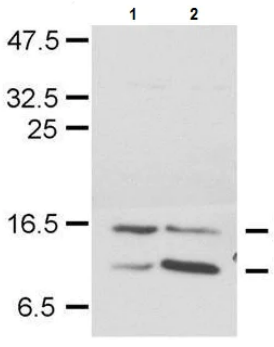
15% SDS-PAGE gel.
All lanes:
Western blot - Anti-LC3B antibody - N-terminal (ab229327) at 1/1000 dilution

All lanes:
Mouse brain lysate at 50 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG

Predicted band size: 15 kDa



Western blot - Anti-LC3B antibody - N-terminal (ab229327)

All lanes:
Western blot - Anti-LC3B antibody - N-terminal (ab229327) at 1/1500 dilution

Lane 1:
Huh7 whole cell lysate (un-infected) at 20 µg

Lane 2:
Huh7 whole cell lysate (HCV-infected) at 20 µg

Secondary

All lanes:
HRP-conjugated anti-rabbit IgG

Predicted band size: 15 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.