

Anti-LC3B antibody [EPR18709] - Autophagosome Marker

Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) is a rabbit monoclonal antibody detecting LC3B in **Western Blot, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 750 publications

Chicken version of this clone also available as ab322912. Same clone, same staining pattern, different species antibody backbone.
Learn more about chimeric antibodies

Lab Essentials

Recombinant

RabMAb

KO Validated

20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR18709
Purification technique	Affinity purification Protein A
Specificity	FURTHER INFORMATION ON SPECIFICITY (Chinese Version) available under the product protocols section. This file includes key technical notes of experience when using this product.
Concentration	0.903 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	0.1-1 µg/mL
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Expected

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

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000

Notes	-
Species	Human
Dilution info	1/2000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1 µg/mL
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
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).
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Storage

Shipped at conditions	Conditional Ambient
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

Notes

Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in ICC/IF, IHC-P and WB.

Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) was first used in a scientific publication in 2017 and has been cited over 468 times in peer reviewed journals. Its performance in Western Blot in human, mouse and rat samples is trusted by the scientific community.

Abcam's high quality manufacturing and validation processes ensure Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

The specificity of Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) has been confirmed by Western Blot testing in LC3B knockout HepG2 cells (ab277828).

Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) has 17 independent reviews from customers.

Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) specifically detects LC3B (UniProt ID: Q9GZQ8; Molecular weight: 15kDa) and is sold in a convenient trial size to enable initial testing (20 µL) and larger sizes for subsequent scaling up experiments (100 µL and 1 mL).

Conjugation-ready, carrier free format available for antibody clone EPR18709 - ab221794.

Antibody clone EPR18709 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, Alexa Fluor® 647, Alexa Fluor® 555 (ab225382, ab225383, ab307768).

LC3B is a protein involved in autophagy, a process that helps maintain cellular homeostasis by degrading damaged components. In oncology, LC3B is used as a marker to assess autophagy levels in cancer cells, which can influence tumor progression and response to therapy.

Patented technology

Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	LC3B also known as Microtubule-associated protein 1A/1B-light chain 3 is a core protein in autophagy processes. LC3B protein has a molecular weight of approximately 14 kDa. Researchers often utilize LC3B as a marker to study autophagic activity especially through LC3B immunofluorescence and LC3B Western blot analyses. This protein is predominantly found in the cytoplasm and is widely expressed in various tissues with higher expression in tissues undergoing high turnover or stress.
Biological function summary	LC3B contributes to the formation of autophagosomes playing an essential role in autophagy. During autophagosome formation LC3B conjugates with phosphatidylethanolamine which localizes it to autophagosome membranes. This lipidated form is important for the elongation and closure of autophagosomes. LC3B is also a component of the autophagy-related protein complex collaborating with other Atg proteins to ensure the proper degradation of cytoplasmic contents.
Pathways	LC3B plays an important role in the autophagy pathway important for cellular homeostasis and stress response. This pathway interfaces with the mTOR signaling pathway where LC3B helps regulate mTOR activity by controlling autophagosome dynamics. LC3B is associated with proteins like Beclin-1 and p62/SQSTM1 within these pathways coordinating the sequestration and degradation of proteins and organelles.
Associated diseases and disorders	LC3B is implicated in cancer and neurodegenerative diseases. Altered LC3B levels and function are observed in cancers linking this protein to tumorigenesis through its role in autophagy. In neurodegenerative disorders like Parkinson's disease LC3B interacts with proteins such as alpha-synuclein influencing the accumulation of protein aggregates and neuronal health. The modulation of LC3B activity is of interest in therapeutic strategies targeting these diseases.

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

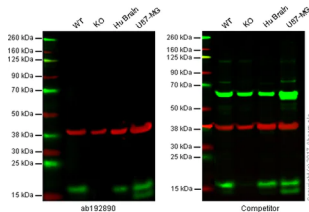
We do not recommend this combination. It is not covered by our product promise.

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.

12 product images



Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

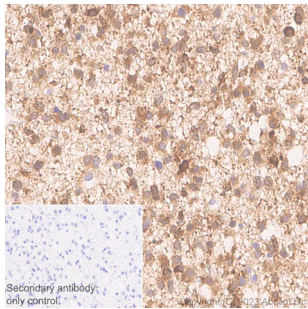
LC3B Western blot staining using rabbit Anti-LC3B antibody

- Lane 1:** Wild-type HAP1 cell lysate (20 µg)
 - Lane 2:** LC3B knockout HAP1 cell lysate (20 µg)
 - Lane 3:** Human brain tissue lysate (20 µg)
 - Lane 4:** U-87 MG cell lysate (20 µg)
 - Lanes 1 - 4:** Merged signal (red and green).
- Green -target observed at 14 and 16 kDa. Red - loading control, [ab8245](#), observed at 37 kDa.

This western blot image is a comparison between ab192890 and a competitor's top cited rabbit polyclonal antibody.

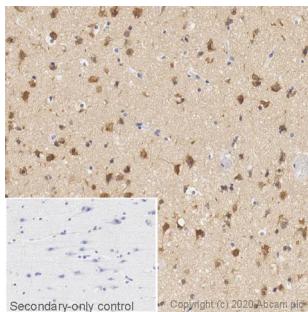
All lanes:
Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

Predicted band size: 15 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

ab192890 staining LC3B in paraffin embedded human astrocytoma tissue by Immunohistochemistry. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins. Samples were incubated with primary antibody at 1/1000 dilution for 30 mins at room temperature. Ready to use LeicaDS9800 (Bond™ Polymer Refine Detection) was used as the secondary antibody. Hematoxylin was used as a counterstain. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



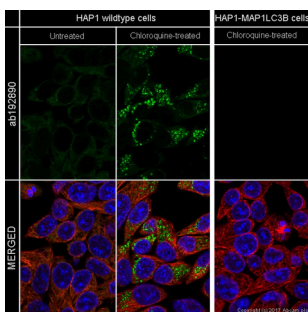
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

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

IHC image of LC3B staining in a section of formalin-fixed paraffin-embedded normal human cerebral cortex* performed on a Leica BOND™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with [ab221794](#), 0.1ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

This data was developed using the same antibody clone in a different buffer formulation containing only PBS ([ab221794](#)).



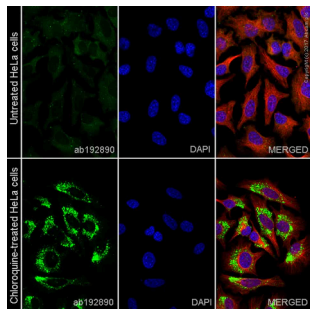
Immunocytochemistry/ Immunofluorescence - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

LC3B Immunocytochemistry/ Immunofluorescence staining of HAP1 cells using rabbit Anti-LC3B antibody

ab192890 staining LC3B in HAP1 cells (wildtype and MAP1LC3B knockout) +/- Chloroquine (50μM 24 hours).

The cells were fixed with 100% methanol (5 min) permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab192890 at 1 μg/ml and [ab195889](#) Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594) at 1/250 dilution (shown in pseudocolor red) followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) ([ab150081](#)) at 2 μg/ml (shown in green). Nuclear DNA was labeled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



Immunocytochemistry/ Immunofluorescence - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

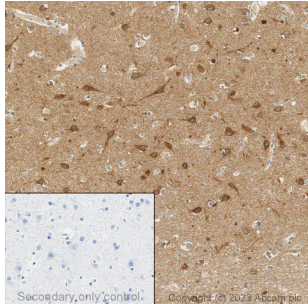
LC3B Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rabbit Anti-LC3B antibody

ab192890 staining LC3B in HeLa (Human epithelial cell line from cervix adenocarcinoma) cells +/- Chloroquine (50µM 24 hours).

The cells were fixed with 100% methanol (5 min) permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab192890 at 1µg/ml and [ab195889](#) Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594) at 1/250 dilution (shown in pseudocolor red) followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) ([ab150081](#)) at 2 µg/ml (shown in green). Nuclear DNA was labeled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).

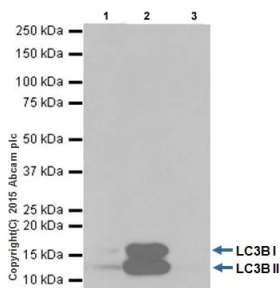
Alexa Fluor® 488 ([ab225383](#)) and Alexa Fluor® 647 ([ab225382](#)) conjugated versions are available for this clone.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

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

Immunohistochemical analysis of formalin fixed paraffin embedded human cortex labelling LC3B with ab192890 at a dilution of 0.1 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was conducted for 32min with ULTRA cell conditioning solution (CC1 pH8.5) . ab192890 anti LC3B antibody was incubated at 37°C for 16min. Sections were counterstained is with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control



Immunoprecipitation - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

LC3B was immunoprecipitated from 1 mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab192890 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab192890 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) ([ab131366](#)), was used for detection at 1/10,000 dilution.

Lane 1: HeLa whole cell lysate 10 µg (Input).

Lane 2: ab192890 IP in HeLa whole cell lysate.

Lane 3: Rabbit IgG, monoclonal [EPR25A] Isotype Control ([ab172730](#)) instead of ab192890 in HeLa whole cell cell lysate.

Blocking/Dilution buffer: 5% NFDM/TBST.

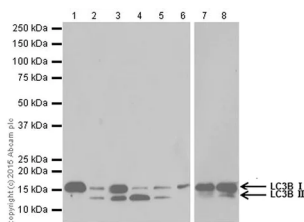
Exposure time: 30 seconds.

All lanes:

Immunoprecipitation - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

Predicted band size: 15 kDa

Exposure time: 30s



Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure times: Lane 1-6: 3 minutes; Lane 7 and 8: 30 seconds.

All lanes:

Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) at 1/2000 dilution

Lane 1:

Human brain lysate at 20 µg

Lane 2:

U-87 MG (Human glioblastoma-astrocytoma epithelial cell line) whole cell lysate at 20 µg

Lane 3:

C6 (Rat glial tumor cell line) whole cell lysate at 20 µg

Lane 4:

RAW 264.7 (Mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 20 µg

Lane 5:

Mouse heart lysate at 20 µg

Lane 6:

Rat heart lysate at 20 µg

Lane 7:

Mouse brain lysate at 20 µg

Lane 8:

Rat brain lysate at 20 µg

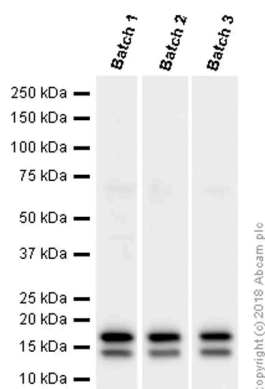
Secondary

All lanes:

Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 15 kDa

Observed band size: 14 kDa, 16 kDa



Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

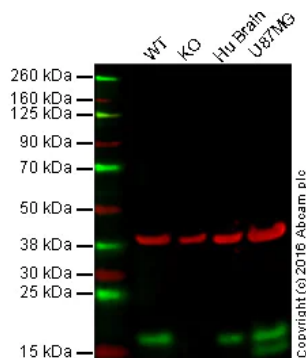
LC3B Western blot staining using rabbit Anti-LC3B antibody

Different batches of ab192890 were tested on U-87 MG (Human glioblastoma-astrocytoma epithelial cell line) lysate at 0.9 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 14, 16 kDa.

All lanes:

Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

Predicted band size: 15 kDa



Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

LC3B Western blot staining using rabbit Anti-LC3B antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)

Lane 2: LC3B knockout HAP1 cell lysate (20 µg)

Lane 3: Human brain tissue lysate (20 µg)

Lane 4: U-87 MG cell lysate (20 µg)

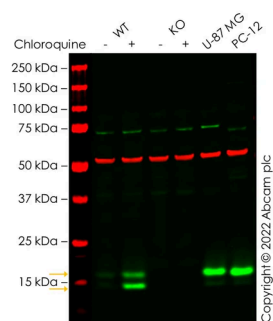
Lanes 1 - 4: Merged signal (red and green). Green - ab192890 observed at 14 and 16 kDa. Red - loading control, [ab8245](#), observed at 37 kDa.

ab192890 was shown to specifically react with LC3B in wild-type HAP1 cells. No band was observed when LC3B knockout samples were examined. Wild-type and LC3B knockout samples were subjected to SDS-PAGE. ab192890 and [ab8245](#) (loading control to GAPDH) were diluted 1/2000 and 1/10,000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed ([ab216776](#)) secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.

All lanes:

Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

Predicted band size: 15 kDa



Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

LC3B Western blot staining using rabbit Anti-LC3B antibody

False colour image of Western blot: Anti-LC3B antibody [EPR18709] - Autophagosome Marker staining at 1/2000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] ([ab7291](#)) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab192890 was shown to bind specifically to LC3B. A band was observed at 16/14 kDa (yellow arrows) in treated wild-type HepG2 cell lysates with no signal observed at this size in MAP1LC3B knockout cell line [ab277828](#) (knockout cell lysate [ab283796](#)). To generate this image, wild-type and MAP1LC3B knockout HepG2 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.

All lanes:

Western blot - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890) at 1/1000 dilution

Lane 1:

Wild-type HepG2 untreated control cell lysate at 20 µg

Lane 2:

Wild-type HepG2 Treated Chloroquine (50 µM, 16 h) cell lysate at 20 µg

Lane 3:

MAP1LC3B knockout HepG2 untreated control cell lysate at 20 µg

Lane 4:

MAP1LC3B knockout HepG2 Treated Chloroquine (50 uM, 16 h) cell lysate at 20 µg

Lane 5:
U-87 MG cell lysate at 20 µg

Lane 6:
PC-12 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 15 kDa

Observed band size: 14 kDa, 16 kDa

Tissue Microarray (TMA) data for ab192890					
Normal tissue samples			Multiple myeloma samples		
Human colon	+	Human colon	Human colon	+	Human colon
Human prostate	+	Human prostate	Human prostate	+	Human prostate
Human liver	+	Human liver	Human liver	+	Human liver
Human kidney	+	Human kidney	Human kidney	+	Human kidney
Human spleen	+	Human spleen	Human spleen	+	Human spleen
Human testis	+	Human testis	Human testis	+	Human testis
Human heart	+	Human heart	Human heart	+	Human heart
Human lung	+	Human lung	Human lung	+	Human lung
Human pancreas	+	Human pancreas	Human pancreas	+	Human pancreas
Human stomach	+	Human stomach	Human stomach	+	Human stomach

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-LC3B antibody [EPR18709] - Autophagosome Marker (ab192890)

Tissue Microarrays stained for Anti-LC3B antibody [EPR18709] - Autophagosome Marker using ab192890 in immunohistochemical analysis. This table provides a detailed overview of positive (tick mark) and negative (cross mark) staining per sample type tested. Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins. The section was incubated with ab192890 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

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