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LC3B Polyclonal Antibody

Catalog Number PA1-16930

Product data sheet

Details	
Size	100 µL
Host/Isotope	Rabbit / IgG
Class	Polyclonal
Type	Antibody
Immunogen	Synthetic peptide between amino acids 1-100 of the human LC3 protein.
Conjugate	Unconjugated
Form	Liquid
Concentration	1 mg/mL
Purification	Antigen affinity chromatography
Storage buffer	PBS
Contains	0.02% sodium azide
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles

Species Reactivity	
Species reactivity	Avian, Bacteria, Bovine, Dog, Chicken, Guinea pig, Hamster, Human, Invertebrate, Mouse, Non-human primate, Pig, Rabbit, Rat, Zebrafish
Published species	Rat, Zebrafish, Human, Mouse, Not Applicable

Tested Applications	Dilution *
ChIP assay (ChIP)	Assay-Dependent
ELISA (ELISA)	Assay-Dependent
Flow Cytometry (Flow)	Assay-Dependent
Immunohistochemistry (Frozen) (IHC (F))	Assay-Dependent
Immunohistochemistry (Paraffin) (IHC (P))	1:200-1:400
Immunoprecipitation (IP)	20 µg/500 µg of protein
Western Blot (WB)	0.5-2 µg/mL
in situ PLA (PLA)	Assay-Dependent
Immunocytochemistry (ICC/IF)	1:200

Published Applications	
Western Blot (WB)	See 10 publications below
Immunoprecipitation (IP)	See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

The reaction with mouse LC3 is weaker than human. The immunogen for this antibody production has 100% sequence homology with rat and zebrafish, 92% with mouse, and 91% with bovine proteins.

Background/Target Information

LC3B (Autophagy Marker Light Chain 3B, MAP1A/MAP1B LC3 B) in humans, is encoded by the gene MAP1LC3B (Microtubule-associated proteins 1A /1B light chain 3B). LC3B is associated with microtubule assembly and important is in neurogenesis. Recent studies indicate that LC3B plays a vital role in autophagy, a process that involves the bulk degradation of cytoplasmic component. Three human LC3 isoforms undergo post-translational modifications during autophagy. Macroautophagy is the major inducible pathway for the general turnover of cytoplasmic constituents in eukaryotic cells, it is also responsible for the degradation of active cytoplasmic enzymes and organelles during nutrient starvation. Macroautophagy involves the formation of double-membrane bound autophagosomes which enclose the cytoplasmic constituent targeted for degradation in a membrane bound structure, which then fuse with the lysosome (or vacuole) releasing a single-membrane bound autophagic bodies which are then degraded within the lysosome (or vacuole). LC3B is a microtubule-associated protein that mediate the physical interactions between microtubules and components of the cytoskeleton. LC3B may play a role in processes involving cancer, aging, metabolic and neurodegenerative disorders and cardiovascular/pulmonary diseases.

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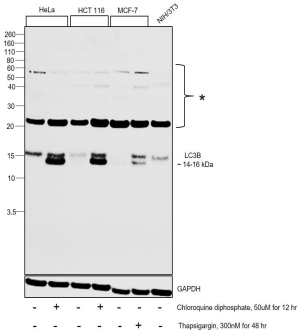
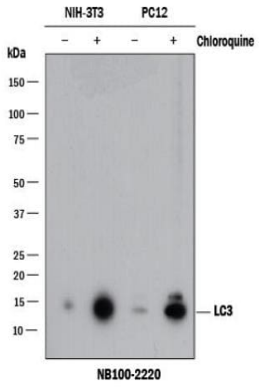
Product Images For LC3B Polyclonal Antibody



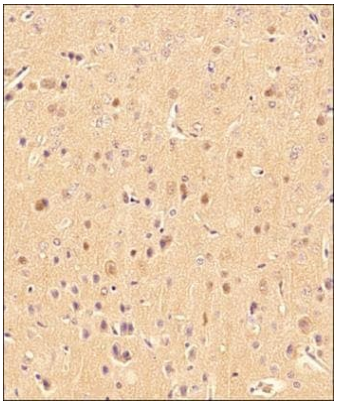
LC3B Antibody (PA1-16930) in WB

Western blot was performed using Anti-LC3B Polyclonal Antibody(Product # PA1-16930) and a 14-16 kDa band corresponding to LC3B was observed across cell lines tested and increased upon chloroquine diphosphate and thapsigargin treatment. Non specific bands were also observed across cell lines tested. Membrane enriched extracts (30 µg lysate) of HeLa (Lane 1), HeLa treated with chloroquine diphosphate (50 µM for 12 hr) (Lane 2), HCT 116 (Lane 3), HCT 116 treated with chloroquine diphosphate (50 µM for 12 hr) (Lane 4), MCF-7 (Lane 5), MCF-7 treated with thapsigargin (300 nm for 48 hr) (Lane 6) and NIH/3T3 (Lane 7) were electrophoresed using NuPAGE™ 12% Bis-Tris Protein Gel (Product # NP0342BOX). Resolved proteins were then transferred onto a Nitrocellulose membrane (Product # IB23001) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with the primary antibody (0.5 µg/mL) and detected by chemiluminescence with Goat anti-Rabbit IgG (Heavy Chain) Superclonal™ Recombinant Secondary Antibody, HRP (Product # A27036,1:4,000 dilution) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005).



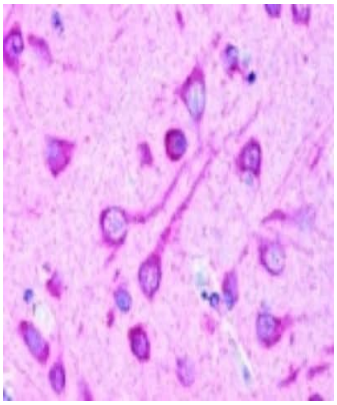
LC3B Antibody (PA1-16930) in WB

Western blot analysis of LC3B in lysates of mouse NIH3T3 and rat PC-12 cell lines untreated (-) or treated (+) with CQ. Samples were incubated in LC3B polyclonal antibody (Product # PA1-16930) using a dilution of 0.5 µg/mL followed by a goat anti-rabbit IgG secondary antibody at a dilution of 1:2000. LC3 detected at a molecular weight of approximately 15 kDa in treated NIH3T3 and PC-12 cells.



LC3B Antibody (PA1-16930) in IHC (P)

Immunohistochemical analysis of LC3B in formalin-fixed paraffin-embedded tissue section of mouse brain. Samples were incubated in LC3B polyclonal antibody (Product # PA1-16930) using a dilution of 1:200 followed by HRP-conjugated secondary antibody with DAB (3, 3 -diaminobenzidine) reagent. Nuclei of cells were counterstained using hematoxylin. This LC3B antibody generated a low to moderate levels of cytoplasmic staining in the glial cells. The neurons depicted a moderate to strong staining for LC3 in their cytoplasm.



LC3B Antibody (PA1-16930) in IHC (P)

Immunohistochemical analysis of LC3B in brain, cerebral cortex, neurons with cell processes. Samples were incubated in LC3B polyclonal antibody (Product # PA1-16930). Analysis using the Biotin conjugate of this antibody.

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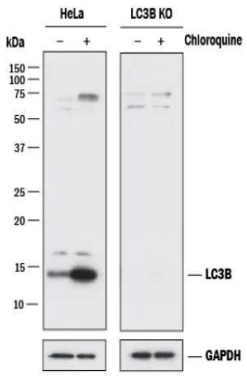
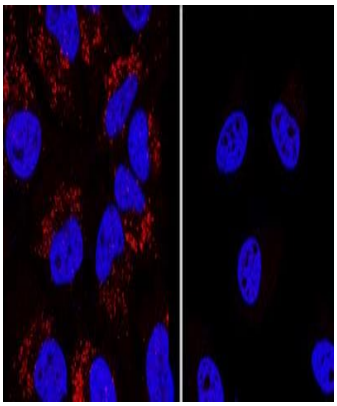


LC3B Antibody (PA1-16930) in WB

Knockout validation by Western blot analysis of LC3B in lysates of HeLa parental cell line and LC3B knockout HeLa cell line (KO) untreated (-) or treated (+) with 50 µM CQ for 18 hours. Samples were incubated in LC3B polyclonal antibody (Product # PA1-16930) using a dilution of 0.5 µg/mL followed by a HRP-conjugated Anti-Rabbit IgG secondary antibody. A specific band was detected for LC3B at a molecular weight of approximately 15 kDa (as indicated) in the parental HeLa cell line, but is not detectable in the knockout HeLa cell line. GAPDH is shown as a loading control. This experiment was conducted under reducing conditions.



LC3B Antibody (PA1-16930) in WB

Knockout validation by Western blot analysis of LC3B in immersion fixed CQ treated HeLa cells (left) and LC3B knockout HeLa cells (right). Samples were incubated in LC3B polyclonal antibody (Product # PA1-16930) using a dilution of 0.3 µg/mL for 3 hours at room temperature followed by a NorthernLights™ 557-conjugated anti-Rabbit IgG secondary antibody. LC3B was detected in the treated HeLa cells but was not detected in LC3B knockout HeLa cells. Cells were counterstained with DAPI (blue). Specific staining was localized to cytoplasm.

LC3B Antibody (PA1-16930) in WB

Western blot analysis of LC3B in 0.5 mg/mL Neuro2A lysate. Samples were incubated in LC3B polyclonal antibody (Product # PA1-16930). This experiment was performed under reducing conditions using the 12-230 kDa separation system.

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PubMed References For LC3B Polyclonal Antibody

10 Western Blot References

Species / Dilution	Summary
Human / 1:1000	PA1-16930 was used in Western Blotting to support the concept of exploiting the pro-death functions of autophagy and LMP for GBM therapy and to further determine whether STAT3 can be employed as a treatment predictor for highly apoptosis-resistant, but autophagy-proficient cancers. Cancers (2022; 14:) **"STAT3 Enhances Sensitivity of Glioblastoma to Drug-Induced Autophagy-Dependent Cell Death."** Author(s):Remy J,Linder B,Weirauch U,Day BW,Stringer BW,Herold-Mende C,Aigner A,Krohn K,Kögel D PubMed Article URL:http://dx.doi.org/10.3390/cancers14020339
Human / Not Cited	PA1-16930 was used in Western Blotting to show that trafficking and channel function of MCOLN3/TRPML3 are regulated in the context of autophagy. Autophagy (2019; 15: 327) **"Palmitoylation controls trafficking of the intracellular Ca²⁺ channel MCOLN3/TRPML3 to regulate autophagy."** Author(s):Kim SW,Kim DH,Park KS,Kim MK,Park YM,Muallem S,So I,Kim HJ PubMed Article URL:http://dx.doi.org/10.1080/15548627.2018.1518671
Not Applicable / 1:500	PA1-16930 was used in western blot to study the mammary gland during the dry period and the effect of heat stress on markers of autophagy Journal of dairy science (2016; 99: 4875) **"Short communication: Effect of heat stress on markers of autophagy in the mammary gland during the dry period."** Author(s):Wohlgemuth SE,Ramirez-Lee Y,Tao S,Monteiro APA,Ahmed BM,Dahl GE PubMed Article URL:http://dx.doi.org/10.3168/jds.2015-10649
Human / 1:500	PA1-16930 was used in western blot to study the mechanism for the oncolytic measles virus replication Journal of virology (2014; 88: 5152) **"Mitophagy enhances oncolytic measles virus replication by mitigating DDX58/RIG-I-like receptor signaling."** Author(s):Xia M,Gonzalez P,Li C,Meng G,Jiang A,Wang H,Gao Q,Debatin KM,Beltinger C,Wei J PubMed Article URL:http://dx.doi.org/10.1128/JVI.03851-13
/ 1:1000 Human / 1:1000	PA1-16930 was used in Western Blotting to demonstrate that ATE1 is increased during SARS-CoV-2 infection and its inhibition has potential therapeutic value. Viruses (2023; 15:) **"Protein Arginylation Is Regulated during SARS-CoV-2 Infection."** Author(s):Macedo-da-Silva J,Rosa-Fernandes L,Gomes VM,Santiago VF,Santos DM,Molnar CMS,Barboza BR,de Souza EE,Marques RF,Boscardin SB,Durigon EL,Marinho CRF,Wrenger C,Marie SKN,Palmisano G PubMed Article URL:http://dx.doi.org/10.3390/v15020290
Zebrafish / 1:1000	PA1-16930 was used in Western Blotting to investigate Alzheimer's Disease pathogenesis regulation by presenilin 2. Cells (2023; 12:) **"Unraveling Presenilin 2 Functions in a Knockout Zebrafish Line to Shed Light into Alzheimer's Disease Pathogenesis."** Author(s):Barazzuol L,Cieri D,Facchinello N,Calì T,Washbourne P,Argenton F,Pizzo P PubMed Article URL:http://dx.doi.org/10.3390/cells12030376
Mouse / Not Cited	PA1-16930 was used in Western Blotting to show that HSP60 is essential to maintain osteoblast autophagy, which facilitates mineralized matrix production. Cell death & disease (2018; 9:) **"Chaperonin 60 sustains osteoblast autophagy and counteracts glucocorticoid aggravation of osteoporosis by chaperoning RPTOR."** Author(s):Lian WS,Ko JY,Chen YS,Ke HC,Wu SL,Kuo CW,Wang FS PubMed Article URL:http://dx.doi.org/10.1038/s41419-018-0970-6
Human / 1:500	PA1-16930 was used in western blot to study the promotion of mitophagy by oncolytic Newcastle disease virus on and its effect on viral replication Oncotarget (2014; 5: 6365) **"Mitophagy promotes replication of oncolytic Newcastle disease virus by blocking intrinsic apoptosis in lung cancer cells."** Author(s):Meng G,Xia M,Wang D,Chen A,Wang Y,Wang H,Yu D,Wei J PubMed Article URL:http://dx.doi.org/10.18632/oncotarget.2219

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	PA1-16930 was used in western blot to investigate the effect of vitamin E on macroautophagy in liver cells
Rat / 1:737	Biochemical and biophysical research communications (2010; 394: 981) **"Vitamin E as a novel enhancer of macroautophagy in rat hepatocytes and H4-II-E cells."** Author(s):Karim MR,Fujimura S,Kadowaki M PubMed Article URL:http://dx.doi.org/10.1016/j.bbrc.2010.03.103
Human / Not Cited	PA1-16930 was used in Western Blotting to provide insight into the metabolic deregulation of endocrine therapy resistant (ETR) cells, and discover molecules that may prove useful in identifying a signature for breast cancer patients with an increased risk of ETR.
	Cell reports (2019; 28: 104) **"Reprogramming of Amino Acid Transporters to Support Aspartate and Glutamate Dependency Sustains Endocrine Resistance in Breast Cancer."** Author(s):Bacci M,Lorito N,Ippolito L,Ramazzotti M,Luti S,Romagnoli S,Parri M,Bianchini F,Cappellesso F,Virga F,Gao Q, Simões BM,Marangoni E,Martin LA,Comito G,Ferracin M,Giannoni E,Mazzone M,Chiarugi P,Morandi A PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2019.06.010

1 Immunoprecipitation References

Species / Dilution	Summary
	PA1-16930 was used in Immunoprecipitation to explore the autophagy-inducing mechanisms that underlie loperamide in glioblastoma cells.
Human / Not Cited	Autophagy (2021; 17: 2432) **"ATF4 links ER stress with reticulophagy in glioblastoma cells."** Author(s):Zielke S,Kardo S,Zein L,Mari M,Covarrubias-Pinto A,Kinzler MN,Meyer N,Stolz A,Fulda S,Reggiori F,Kögel D, van Wijk S PubMed Article URL:http://dx.doi.org/10.1080/15548627.2020.1827780

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