

PRODUCT INFORMATION

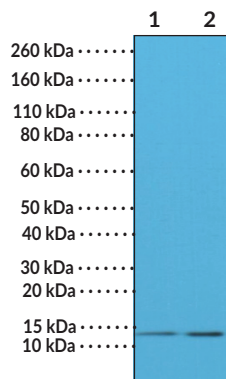


MAP1LC3B/LC3B (N-Term) Rabbit Monoclonal Antibody (Clone RM293) Item No. 32238

Overview and Properties

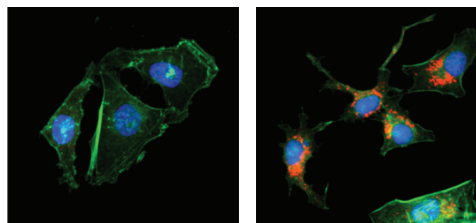
Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Autophagy-related Protein LC3B, Autophagy-related Ubiquitin-like Modifier LC3B, MAP1 Light Chain 3-like Protein 2, Microtubule-associated Protein 1 Light Chain 3β
Immunogen:	A peptide from the N-terminal region of human LC3B
Cross Reactivity:	(+) LCB3
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM293
Host:	Rabbit
Isotype:	IgG
Applications:	Immunocytochemistry (ICC), Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution is 1:100-1:200 for ICC, IHC, and WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: HeLa cells untreated
Lane 2: HeLa cells treated

WB of HeLa cell lysates untreated or treated with chloroquine (CHQ) using MAP1LC3B/LC3B (N-Term) Rabbit Monoclonal Antibody (Clone RM293) at a 1:200 dilution.



Control

CHQ-treated

Immunofluorescent labeling of HeLa cells untreated or treated with CHQ using MAP1LC3B/LC3B (N-Term) Rabbit Monoclonal Antibody (Clone RM293) at a 1:200 dilution. Actin filaments have been labeled with a fluorescein phalloidin (green) and nuclei labeled DAPI (blue).



Immunohistochemical staining of formalin-fixed and paraffin-embedded human brain tissue using MAP1LC3B/LC3B (N-Term) Rabbit Monoclonal Antibody (Clone RM293) at a 1:200 dilution.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 01/30/2024

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Microtubule-associated protein 1 light chain β (MAP1LC3B), also known as LC3B, is an ortholog of yeast Atg8 that is essential to autophagosome biogenesis.⁶ LC3B is irreversibly cleaved by the cysteine protease ATG4B (Item No. 25380) to its active form LC3B-I, which contains an exposed C-terminal glycine residue needed for autophagosome formation.^{1,2} LC3B-I is then conjugated to phosphatidylethanolamine in canonical autophagy by the ATG12-ATG5-ATG16 complex to form LC3B-II, which localizes to the autophagosomal membrane.³⁻⁶ Knockdown of LC3B increases the number of ATG5- and ATG16-positive puncta in HeLa cells, indicating a defect in the maturation of autophagosomes.⁶ LC3B expression is upregulated in various cancers and has disease-specific implications on progression and prognosis.^{7,8} In metastatic and castration-resistant human prostate cancer tumor samples, LC3B expression is upregulated and is positively correlated with reduced disease-specific mortality.⁶ Expression of LC3B is also increased in oral squamous cell carcinomas and is associated with aggressive pathological features and poor prognosis.⁸ Cayman's MAP1LC3B/LC3B (N-Term) Rabbit Monoclonal Antibody (Clone RM293) can be used for immunocytochemistry (ICC), immunohistochemistry (IHC), and Western blot (WB) applications.

References

1. Li, M., Hou, Y., Wang, J., *et al.* Kinetics comparisons of mammalian Atg4 homologues indicate selective preferences toward diverse Atg8 substrates. *J. Biol. Chem.* **286**(9), 7327-7338 (2011).
2. Yang, Z., Wilkie-Grantham, R.P., Yanagi, T., *et al.* ATG4B (Autophagin-1) phosphorylation modulates autophagy. *J. Biol. Chem.* **290**(44), 26549-26561 (2015).
3. Otomo, C., Metlagel, Z., Takaesu, G., *et al.* Structure of the human ATG12~ATG5 conjugate required for LC3 lipidation in autophagy. *Nat. Struct. Mol. Biol.* **20**(1), 59-66 (2013).
4. Kim, J.H., Hong, S.B., Lee, J.K., *et al.* Insights into autophagosome maturation revealed by the structures of ATG5 with its interacting partners. *Autophagy* **11**(1), 75-87 (2015).
5. Ye, X., Zhou, X.J., and Zhang, H. Exploring the role of autophagy-related gene 5 (ATG5) yields important insights into autophagy in autoimmune/autoinflammatory diseases. *Front. Immunol.* **9**, 2334 (2018).
6. Weidberg, H., Shvets, E., Shpilka, T., *et al.* LC3 and GATE-16/GABARAP subfamilies are both essential yet act differently in autophagosome biogenesis. *EMBO J.* **29**(11), 1792-1802 (2010).
7. Mortezaei, A., Salemi, S., Rupp, N.J., *et al.* Negative LC3b immunoreactivity in cancer cells is an independent prognostic predictor of prostate cancer specific death. *Oncotarget* **8**(19), 31765-31774 (2017).
8. Liu, J.-L., Chen, F.-F., Lung, J., *et al.* Prognostic significance of p62/SQSTM1 subcellular localization and LC3B in oral squamous cell carcinoma. *Br. J. Cancer* **111**(5), 944-954 (2014).