SANTA CRUZ BIOTECHNOLOGY, INC.

MAP LC3β (G-2): sc-271625

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Microtubule-associated proteins (MAPs) regulate microtubule stability and play critical roles in neuronal development and in maintaining the balance between neuronal plasticity and rigidity. MAP-light chain 3β (MAP LC3β) and MAP-light chain 3α (MAP LC3α) are subunits of both MAP1A and MAP1B. MAP LC3β, a homolog of Apg8p, is essential for autophagy and associated to the autophagosome membranes after processing. Two forms of LC3β, the cytosolic LC3-I and the membrane-bound LC3-II, are produced posttranslationally. LC3-I is formed by the removal of the C-terminal 22 amino acids from newly synthesized LC3β, followed by the conversion of a fraction of LC3-I into LC3-II. LC3 enhances Fibronectin mRNA translation in ductus arteriosus cells through association with 60S ribosomes and binding to an AU-rich element in the 3' untranslated region of Fibronectin mRNA. This facilitates sorting of Fibronectin mRNA onto rough endoplasmic reticulum and translation. MAP LC3β may also be involved in formation of autophagosomal vacuoles. It is expressed primarily in heart, testis, brain and skeletal muscle.

CHROMOSOMAL LOCATION

Genetic locus: MAP1LC3B (human) mapping to 16q24.2, MAP1LC3B2 (human) mapping to 12q24.22; Map1lc3a (mouse) mapping to 2 H1, Map1lc3b (mouse) mapping to 8 E1.

SOURCE

MAP LC3β (G-2) is a mouse monoclonal antibody raised against amino acids 1-50 mapping at the N-terminus of MAP LC3β of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAP LC3β (G-2) is available conjugated to agarose (sc-271625 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271625 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271625 PE), fluorescein (sc-271625 FITC), Alexa Fluor® 488 (sc-271625 AF488), Alexa Fluor® 546 (sc-271625 AF546), Alexa Fluor® 594 (sc-271625 AF594) or Alexa Fluor® 647 (sc-271625 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271625 AF680) or Alexa Fluor® 790 (sc-271625 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MAP LC3β (G-2) is recommended for detection of MAP LC3β and MAP LC3β2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

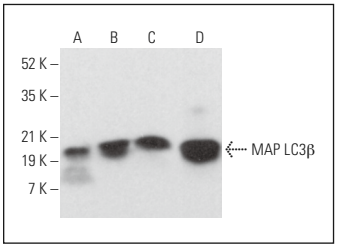
MAP LC3β (G-2) is also recommended for detection of MAP LC3β and MAP LC3β2 in additional species, including canine, bovine and porcine.

Molecular Weight of MAP LC3β: 15 kDa.

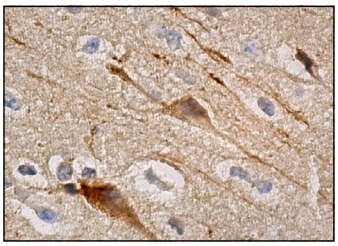
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



MAP LC3β (G-2): sc-271625. Western blot analysis of MAP LC3β expression in Neuro-2A (**A**) and C6 (**B**) whole cell lysates and mouse postnatal brain (**C**) and rat brain (**D**) tissue extracts.



MAP LC3β (G-2): sc-271625. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal and glial cells.

SELECT PRODUCT CITATIONS

1. Shao, J. and Feng, G. 2013. Selective killing effect of oxytetracycline, propafenone and metamizole on A549 or Hela cells. Chin. J. Cancer Res. 25: 662-670.
2. Wu, Y., et al. 2016. Autophagic death induced by thermo-chemotherapy in gastric cancer cells results from the reactive oxygen species pathway. Mol. Med. Rep. 14: 1210-1218.
3. Zhang, W. and Zhang, J. 2017. Dexmedetomidine preconditioning protects against lung injury induced by ischemia-reperfusion through inhibition of autophagy. Exp. Ther. Med. 14: 973-980.
4. Wang, H., et al. 2018. miR-16 mimics inhibit TGF-β1-induced epithelial-to-mesenchymal transition via activation of autophagy in non-small cell lung carcinoma cells. Oncol. Rep. 39: 247-254.
5. Gao, S., et al. 2019. Long non-coding RNA MEG3 attends to morphine-mediated autophagy of HT22 cells through modulating ERK pathway. Pharm. Biol. 57: 536-542.
6. Gao, X., et al. 2020. Morroniside inhibits H_2O_2-induced podocyte apoptosis by down-regulating NOX4 expression controlled by autophagy *in vitro.* Front. Pharmacol. 11: 533809.
7. Ping, F., et al. 2021. Cx32 inhibits the autophagic effect of Nur77 in SH-SY5Y cells and rat brain with ischemic stroke. Aging 13: 22188-22207.
8. Wu, Q., et al. 2022. LncRNA GAS5 promotes spermidine-induced autophagy through the miRNA-31-5p/NAT8L axis in pulmonary artery endothelial cells of patients with CTEPH. Mol. Med. Rep. 26: 297.
9. Wei, S., et al. 2023. MAT as a promising therapeutic strategy against triple-negative breast cancer via inhibiting PI3K/AKT pathway. Sci. Rep. 13: 12351.

RESEARCH USE

For research use only, not for use in diagnostic procedures.