SANTA CRUZ BIOTECHNOLOGY, INC.

MAP LC3β (G-9): sc-376404

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 3 β (MAP-LC3β) and MAP-light chain 3 α (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 post-translationally. 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; Map1lc3b (mouse) mapping to 8 E1.

SOURCE

MAP LC3β (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-39 near 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-9) is available conjugated to agarose (sc-376404 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376404 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376404 PE), fluorescein (sc-376404 FITC), Alexa Fluor® 488 (sc-376404 AF488), Alexa Fluor® 546 (sc-376404 AF546), Alexa Fluor® 594 (sc-376404 AF594) or Alexa Fluor® 647 (sc-376404 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376404 AF680) or Alexa Fluor® 790 (sc-376404 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376404 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

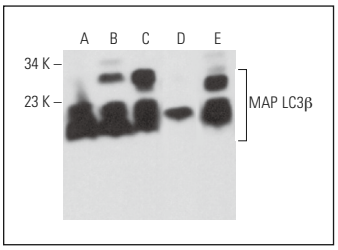
MAP LC3β (G-9) is recommended for detection of MAP LC3β and MAP LC3β2 of human origin and MAP LC3β of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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).

Suitable for use as control antibody for MAP LC3β siRNA (h): sc-43390, MAP LC3β siRNA (m): sc-43391, MAP LC3β shRNA Plasmid (h): sc-43390-SH, MAP LC3β shRNA Plasmid (m): sc-43391-SH, MAP LC3β shRNA (h) Lentiviral Particles: sc-43390-V and MAP LC3β shRNA (m) Lentiviral Particles: sc-43391-V.

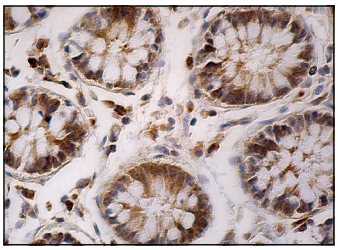
Molecular Weight of MAP LC3β: 15 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, F9 cell lysate: sc-2245 or U-87 MG cell lysate: sc-2411.

DATA



MAP LC3β (G-9): sc-376404. Western blot analysis of MAP LC3β expression in U-87 MG (**A**), NIH/3T3 (**B**) and F9 (**C**) whole cell lysates and human brain (**D**) and mouse brain (**E**) tissue extracts.



MAP LC3β (G-9): sc-376404. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Zhao, D., et al. 2014. Autophagy prevents doxorubicin-induced apoptosis in osteosarcoma. Mol. Med. Rep. 9: 1975-1981.
2. Ma, Y., et al. 2015. Testosterone regulates the autophagic clearance of androgen binding protein in rat Sertoli cells. Sci. Rep. 5: 8894.
3. Wang, J., et al. 2017. Autophagy regulates endothelial-mesenchymal transition by decreasing the phosphorylation level of Smad3. Biochem. Biophys. Res. Commun. 487: 740-747.
4. Ma, Y., et al. 2018. Lipophagy contributes to testosterone biosynthesis in male rat Leydig cells. Endocrinology 159: 1119-1129.
5. Wu, C., et al. 2019. MAP4K4 activation mediates motor neuron degeneration in amyotrophic lateral sclerosis. Cell Rep. 26: 1143-1156.e5.
6. Fan, X., et al. 2020. Critical roles of conventional dendritic cells in autoimmune hepatitis via autophagy regulation. Cell Death Dis. 11: 23.

RESEARCH USE

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