

# MAP LC3 $\beta$ (G-9): sc-376404

## 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  $\beta$  (MAP-LC3 $\beta$ ) and MAP-light chain 3  $\alpha$  (MAP-LC3 $\alpha$ ) are subunits of both MAP1A and MAP1B. MAP-LC3 $\beta$ , a homolog of Apg8p, is essential for autophagy and associated to the autophagosome membranes after processing. Two forms of LC3 $\beta$ , 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 LC3 $\beta$ , 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 LC3 $\beta$  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 LC3 $\beta$  (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-39 near the N-terminus of MAP LC3 $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAP LC3 $\beta$  (G-9) is available conjugated to agarose (sc-376404 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376404 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376404 PE), fluorescein (sc-376404 FITC), Alexa Fluor<sup>®</sup> 488 (sc-376404 AF488), Alexa Fluor<sup>®</sup> 546 (sc-376404 AF546), Alexa Fluor<sup>®</sup> 594 (sc-376404 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-376404 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-376404 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-376404 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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

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## 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](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

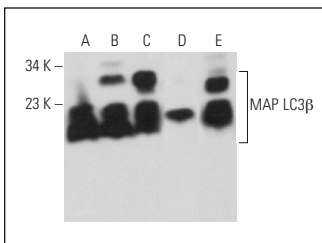
MAP LC3 $\beta$  (G-9) is recommended for detection of MAP LC3 $\beta$  and MAP LC3 $\beta$ 2 of human origin and MAP LC3 $\beta$  of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (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 LC3 $\beta$  siRNA (h): sc-43390, MAP LC3 $\beta$  siRNA (m): sc-43391, MAP LC3 $\beta$  shRNA Plasmid (h): sc-43390-SH, MAP LC3 $\beta$  shRNA Plasmid (m): sc-43391-SH, MAP LC3 $\beta$  shRNA (h) Lentiviral Particles: sc-43390-V and MAP LC3 $\beta$  shRNA (m) Lentiviral Particles: sc-43391-V.

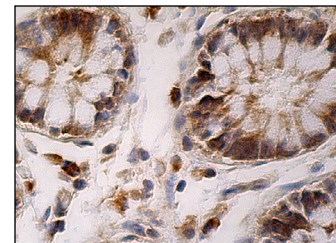
Molecular Weight of MAP LC3 $\beta$ : 15 kDa.

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

## DATA



MAP LC3 $\beta$  (G-9): sc-376404. Western blot analysis of MAP LC3 $\beta$  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 LC3 $\beta$  (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

- Zhao, D., et al. 2014. Autophagy prevents doxorubicin-induced apoptosis in osteosarcoma. *Mol. Med. Rep.* 9: 1975-1981.
- Ma, Y., et al. 2015. Testosterone regulates the autophagic clearance of androgen binding protein in rat Sertoli cells. *Sci. Rep.* 5: 8894.
- Wang, J., et al. 2017. Autophagy regulates endothelial-mesenchymal transition by decreasing the phosphorylation level of Smad3. *Biochem. Biophys. Res. Commun.* 487: 740-747.
- Ma, Y., et al. 2018. Lipophagy contributes to testosterone biosynthesis in male rat Leydig cells. *Endocrinology* 159: 1119-1129.
- Wu, C., et al. 2019. MAP4K4 activation mediates motor neuron degeneration in amyotrophic lateral sclerosis. *Cell Rep.* 26: 1143-1156.e5.
- 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.