

MAP LC3 α/β (S-15): sc-54237

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 LC3 β) and MAP-light chain 3 α (MAP LC3 α) are subunits of both MAP1A and MAP1B. MAP LC3 β , a homolog of Apg8p, is essential for autophagy and associated to the autophagosome membranes after processing. Two forms of LC3 β , 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 LC3 β , 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 β may also be involved in formation of autophagosomal vacuoles. It is expressed primarily in heart, testis, brain and skeletal muscle.

REFERENCES

1. Fink, J.K., et al. 1996. Human microtubule-associated protein 1A (MAP1A) gene: genomic organization, cDNA sequence, and developmental and tissue-specific expression. *Genomics* 35: 577-585.
2. Mann, S.S., et al. 1996. Gene localization and developmental expression of light chain 3: a common subunit of microtubule-associated protein 1A (MAP1A) and MAP1B. *J. Neurosci. Res.* 43: 535-544.
3. Zhou, B., et al. 1997. Microtubule-associated protein 1 light chain 3 is a Fibronectin mRNA-binding protein linked to mRNA translation in lamb vascular smooth muscle cells. *J. Clin. Invest.* 100: 3070-3082.
4. Zhou, B., et al. 1998. Microtubule involvement in translational regulation of Fibronectin expression by light chain 3 of microtubule-associated protein 1 in vascular smooth muscle cells. *Circ. Res.* 83: 481-489.
5. Kabeya, Y., et al. 2000. LC3, a mammalian homolog of yeast Apg8p, is localized in autophagosome membrane after processing. *EMBO J.* 19: 5720-5728.

SOURCE

MAP LC3 α/β (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MAP LC3 β of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-54237 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4 $^{\circ}$ C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

MAP LC3 α/β (S-15) is recommended for detection of MAP LC3 α and MAP LC3 β of mouse, rat and human origin and MAP LC3 β 2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

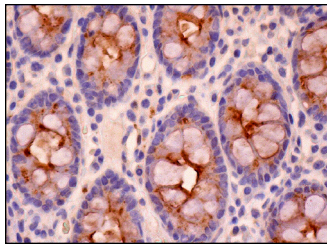
MAP LC3 α/β (S-15) is also recommended for detection of MAP LC3 α and MAP LC3 β and MAP LC3 β 2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for MAP LC3 α/β siRNA (m): sc-156052, MAP LC3 α/β shRNA Plasmid (m): sc-156052-SH and MAP LC3 α/β shRNA (m) Lentiviral Particles: sc-156052-V.

Molecular Weight of MAP LC3 α isoforms: 15/18 kDa.

Molecular Weight of MAP LC3 β : 15 kDa.

DATA



MAP LC3 α/β (S-15): sc-54237. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells.

RESEARCH USE

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

PROTOCOLS

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



Try **MAP LC3 α/β (G-4): sc-398822**, our highly recommended monoclonal alternative to MAP LC3 α/β (S-15). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **MAP LC3 α/β (G-4): sc-398822**.