SANTA CRUZ BIOTECHNOLOGY, INC.

MAP LC3α/β (G-4): sc-398822

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 that can associate with either MAP-1A or MAP-1B. While MAP-LC3β is essential for autophagy and is associated with autophagosome membranes after processing, MAP LC3α is involved in the formation of autophagosomal vacuoles and is localized to the intracytoplasmic membrane. MAP LC3α is expressed as two alternatively spliced isoforms that are expressed in testis, brain, heart, liver and skeletal muscle, but are absent in thymus and peripheral blood leukocytes. MAP LC3β, which exists in a cytosolic and a membrane-bound form, may also be involved in formation of autophagosomal vacuoles and is expressed primarily in heart, testis, brain and skeletal muscle.

SOURCE

MAP LC3α/β (G-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-56 within an internal region of MAP LC3β of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAP LC3α/β (G-4) is available conjugated to agarose (sc-398822 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398822 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398822 PE), fluorescein (sc-398822 FITC), Alexa Fluor® 488 (sc-398822 AF488), Alexa Fluor® 546 (sc-398822 AF546), Alexa Fluor® 594 (sc-398822 AF594) or Alexa Fluor® 647 (sc-398822 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398822 AF680) or Alexa Fluor® 790 (sc-398822 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398822 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MAP LC3α/β (G-4) is recommended for detection of MAP LC3α and MAP LC3β of mouse, rat and human origin and MAP LC3β2 of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MAP LC3α/β siRNA (m): sc-156052, MAP LC3α/β shRNA Plasmid (m): sc-156052-SH and MAP LC3α/β shRNA (m) Lentiviral Particles: sc-156052-V.

Molecular Weight of MAP LC3α isoforms: 15/18 kDa.

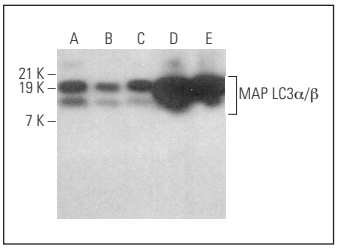
Molecular Weight of MAP LC3β: 15 kDa.

Positive Controls: HT-1080 whole cell lysate: sc-364183, Saos-2 cell lysate: sc-2235 or U-251-MG whole cell lysate: sc-364176.

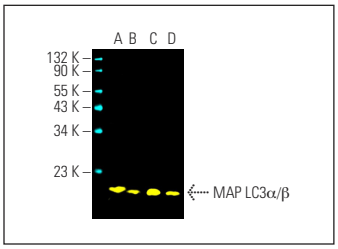
STORAGE

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

DATA



MAP LC3α/β (G-4): sc-398822. Western blot analysis of MAP LC3α/β expression in Saos-2 (**A**), U-251-MG (**B**) and HT-1080 (**C**) whole cell lysates and mouse brain (**D**) and rat brain (**E**) tissue extracts.



MAP LC3α/β (G-4) Alexa Fluor® 488: sc-398822 AF488. Direct fluorescent western blot analysis of MAP LC3α/β expression in U-251-MG whole cell lysate (**A**) and human brain (**B**), rat brain (**C**) and mouse brain (**D**) tissue extracts. Blocked with : sc- 516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 647: sc-516791.

SELECT PRODUCT CITATIONS

1. Ozeki, N., et al. 2015. Interleukin-1β-induced autophagy-related gene 5 regulates proliferation of embryonic stem cell-derived odontoblastic cells. PLoS ONE 10: e0124542.
2. Ozeki, N., et al. 2016. Autophagy-related gene 5 and Wnt5 signaling pathway requires differentiation of embryonic stem cells into odontoblast-like cells. Exp. Cell Res. 341: 92-104.
3. Wang, T., et al. 2017. Regulation of autophagy inhibition and inflammatory response in glioma by Wnt signaling pathway. Oncol. Lett. 14: 7197-7200.
4. Lu, Q., et al. 2017. EWS-FLI1 positively regulates autophagy by increasing ATG4B expression in Ewing sarcoma cells. Int. J. Mol. Med. 40: 1217-1225.
5. Rubtsova, M., et al. 2018. Protein encoded in human telomerase RNA is involved in cell protective pathways. Nucleic Acids Res. 46: 8966-8977.
6. Mylka, V., et al. 2018. The autophagy receptor SQSTM1/p62 mediates anti-inflammatory actions of the selective NR3C1/glucocorticoid receptor modulator compound A (CpdA) in macrophages. Autophagy 14: 2049-2064.
7. Ji, H., et al. 2018. Effects of thymosin β4 on oxygen-glucose deprivation and reoxygenation-induced injury. Int. J. Mol. Med. 41: 1749-1755.
8. Wnuk, A., et al. 2019. Prenatal exposure to benzophenone-3 impairs autophagy, disrupts RXRs/PPARγ signaling, and alters epigenetic and post-translational statuses in brain neurons. Mol. Neurobiol. 56: 4820-4837.
9. Rzemieniec, J., et al. 2019. The neuroprotective action of 3,3'-diindolylmethane against ischemia involves an inhibition of apoptosis and autophagy that depends on HDAC and AhR/CYP1A1 but not ERα/CYP19A1 signaling. Apoptosis 24: 435-452.

RESEARCH USE

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