

MAP-1B (H-8): sc-365668

BACKGROUND

Microtubules, the primary component of the cytoskeletal network, interact with proteins called microtubule-associated proteins (MAPs). The microtubule-associated proteins can be divided into two groups, structural and dynamic. The structural microtubule-associated proteins, MAP-1A, MAP-1B, MAP-2A, MAP-2B and MAP-2C, stimulate Tubulin assembly, enhance microtubule stability and influence the spatial distribution of microtubules within cells. Both MAP-1 and, to a greater extent, MAP-2 have been implicated as agents of microtubule depolymerization by suppressing the dynamic instability of the microtubules. The suppression of microtubule dynamic instability by the MAP proteins is thought to be associated with phosphorylation of the MAPs.

REFERENCES

1. Sloboda, R.D., et al. 1976. Microtubule-associated proteins and the stimulation of Tubulin assembly *in vitro*. *Biochemistry* 15: 4497-4505.
2. Murphy, D.B., et al. 1977. Role of Tubulin-associated proteins in microtubule nucleation and elongation. *J. Mol. Biol.* 117: 33-52.
3. Hasegawa, M., et al. 1990. Immunochemical evidence that fragments of phosphorylated MAP5 (MAP1B) are bound to neurofibrillary tangles in Alzheimer's disease. *Neuron* 4: 909-918.
4. MacRae, T.H. 1992. Towards an understanding of microtubule function and cell organization: an overview. *Biochem. Cell Biol.* 70: 835-841.
5. Davis, R.J. 1993. The mitogen-activated protein kinase signal transduction pathway. *J. Biol. Chem.* 268: 14553-14556.

CHROMOSOMAL LOCATION

Genetic locus: MAP1B (human) mapping to 5q13.2; Mtap1b (mouse) mapping to 13 D1.

SOURCE

MAP-1B (H-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 6-31 at the N-terminus of MAP-1B 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-1B (H-8) is available conjugated to agarose (sc-365668 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365668 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365668 PE), fluorescein (sc-365668 FITC), Alexa Fluor® 488 (sc-365668 AF488), Alexa Fluor® 546 (sc-365668 AF546), Alexa Fluor® 594 (sc-365668 AF594) or Alexa Fluor® 647 (sc-365668 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365668 AF680) or Alexa Fluor® 790 (sc-365668 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365668 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

MAP-1B (H-8) is recommended for detection of MAP-1B 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MAP-1B siRNA (h): sc-35851, MAP-1B siRNA (m): sc-35852, MAP-1B shRNA Plasmid (h): sc-35851-SH, MAP-1B shRNA Plasmid (m): sc-35852-SH, MAP-1B shRNA (h) Lentiviral Particles: sc-35851-V and MAP-1B shRNA (m) Lentiviral Particles: sc-35852-V.

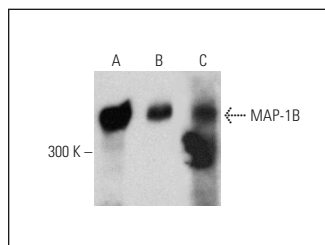
Molecular Weight of MAP-1B light chain: 34 kDa.

Molecular Weight (predicted) of MAP-1B heavy chain: 271 kDa.

Molecular Weight (observed) of MAP-1B heavy chain: 325 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, EOC 20 whole cell lysate: sc-364187 or C6 whole cell lysate: sc-364373.

DATA



MAP-1B (H-8): sc-365668. Western blot analysis of MAP-1B expression in Neuro-2A (A), EOC 20 (B) and C6 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Takahara, T., et al. 2017. The calcium-binding protein ALG-2 regulates protein secretion and trafficking via interactions with MISSL and MAP-1B proteins. *J. Biol. Chem.* 292: 17057-17072.
2. Walters, G.B., et al. 2018. MAP-1B mutations cause intellectual disability and extensive white matter deficit. *Nat. Commun.* 9: 3456.
3. Pietras, L., et al. 2022. FBP2-a new player in regulation of motility of mitochondria and stability of microtubules in cardiomyocytes. *Cells* 11: 1710.
4. Chu, S., et al. 2022. Multiple pathways promote microtubule stabilization in senescent intestinal epithelial cells. *NPJ Aging* 8: 16.

STORAGE

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

RESEARCH USE

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