SANTA CRUZ BIOTECHNOLOGY, INC.

MAP-1A (H-300): sc-25728

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.
6. Dhamodharan, R. and Wadsworth, P. 1995. Modulation of microtubule dynamic instability *in vivo* by brain microtubule associated proteins. J. Cell Sci. 108: 1679-1689.
7. Maccioni, R.B. and Cambiazo, V. 1995. Role of microtubule-associated proteins in the control of microtubule assembly. Physiol. Rev. 75: 835-864.
8. Vandecandelaere, A., et al. 1996. Differences in the regulation of microtubule dynamics by microtubule-associated proteins MAP1B and MAP2. Cell. Motil. Cytoskeleton 35: 134-146.

CHROMOSOMAL LOCATION

Genetic locus: MAP1A (human) mapping to 15q15.3; Mtap1a (mouse) mapping to 2 E5.

SOURCE

MAP-1A (H-300) is a rabbit polyclonal antibody raised against amino acids 2211-2510 of MAP-1A of human origin.

PRODUCT

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

RESEARCH USE

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

APPLICATIONS

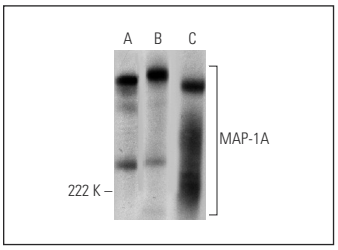
MAP-1A (H-300) is recommended for detection of MAP-1A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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-1A siRNA (h): sc-43392, MAP-1A siRNA (m): sc-43393, MAP-1A shRNA Plasmid (h): sc-43392-SH, MAP-1A shRNA Plasmid (m): sc-43393-SH, MAP-1A shRNA (h) Lentiviral Particles: sc-43392-V and MAP-1A shRNA (m) Lentiviral Particles: sc-43393-V.

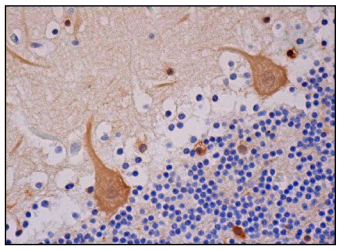
Molecular Weight of MAP-1A: 380 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, K-562 whole cell lysate: sc-2203 or rat brain extract: sc-2392.

DATA



MAP-1A (H-300): sc-25728. Western blot analysis of MAP-1A expression in Caki-1 (**A**) and K-562 (**B**) whole cell lysates and rat brain tissue extract (**C**).



MAP-1A (H-300): sc-25728. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and membrane staining of Purkinje cells and cytoplasmic, membrane and nuclear staining of subset of cells in granular and molecular layers.

SELECT PRODUCT CITATIONS

1. Lajoie-Mazenc, I., et al. 2008. MAP-1A light chain-2 interacts with GTP-RhoB to control epidermal growth factor (EGF)-dependent EGF receptor signaling. J. Biol. Chem. 283: 4155-4164.
2. Sachana, M., et al. 2008. Inhibition of extension outgrowth in differentiating rat C6 glioma cells by chlorpyrifos and chlorpyrifos oxon: effects on microtubule proteins. Toxicol. In Vitro 22: 1387-1391.
3. Zhu, H.J., et al. 2012. Impaired N-cadherin-mediated adhesion increases the risk of inducible ventricular arrhythmias in isolated rat hearts. Sci. Res. Essays 7: 2983-2991.

STORAGE

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