

MAP-2 (A-8): sc-74422

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.

CHROMOSOMAL LOCATION

Genetic locus: MAP2 (human) mapping to 2q34; Mtap2 (mouse) mapping to 1 C3.

SOURCE

MAP-2 (A-8) is a mouse monoclonal antibody raised against amino acids 1-300 of MAP-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MAP-2 (A-8) is recommended for detection of MAP-2 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), 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-2 siRNA (h): sc-35853, MAP-2 siRNA (m): sc-35854, MAP-2 shRNA Plasmid (h): sc-35853-SH, MAP-2 shRNA Plasmid (m): sc-35854-SH, MAP-2 shRNA (h) Lentiviral Particles: sc-35853-V and MAP-2 shRNA (m) Lentiviral Particles: sc-35854-V.

Molecular Weight of MAP-2: 280 kDa.

Molecular Weight of MAP-2 low molecular weight isoform: 70 kDa.

Positive Controls: MAP-2 (h): 293T Lysate: sc-115536, SK-N-SH cell lysate: sc-2410 or mouse brain extract: sc-2253.

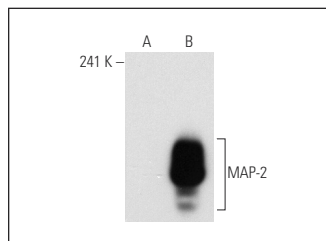
RESEARCH USE

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

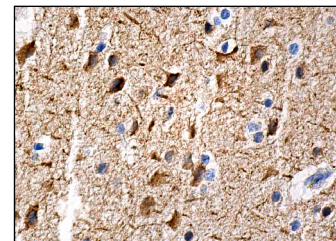
STORAGE

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

DATA



MAP-2 (A-8): sc-74422. Western blot analysis of MAP-2 expression in non-transfected: sc-117752 (A) and human MAP-2 transfected: sc-115536 (B) 293T whole cell lysates.



MAP-2 (A-8): sc-74422. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing neuropil and cytoplasmic staining of neuronal cells.

SELECT PRODUCT CITATIONS

1. Katalan, S., et al. 2013. Magnesium sulfate treatment against sarin poisoning: dissociation between overt convulsions and recorded cortical seizure activity. *Arch. Toxicol.* 87: 347-360.
2. Xu, X., et al. 2015. Increased expression of receptor for activated C kinase 1 in temporal lobe epilepsy. *J. Neurochem.* 133: 134-143.
3. Yuan, J., et al. 2016. Acteoside binds to caspase-3 and exerts neuroprotection in the rotenone rat model of Parkinson's disease. *PLoS ONE* 11: e0162696.
4. Wang, N., et al. 2017. Myeloid differentiation factor 88 is up-regulated in epileptic brain and contributes to experimental seizures in rats. *Exp. Neurol.* 295: 23-35.
5. Cai, J., et al. 2018. Analysis of FK506-mediated functional recovery and neuroprotection in a rat model of spinal cord injury indicates that EGF is modulated in astrocytes. *Exp. Ther. Med.* 16: 501-510.
6. Cacialli, P., et al. 2019. Nerve growth factor is expressed and stored in central neurons of adult zebrafish. *J. Anat.* 235: 167-179.
7. Zhang, W., et al. 2020. CNTNAP4 deficiency in dopaminergic neurons initiates parkinsonian phenotypes. *Theranostics* 10: 3000-3021.
8. Beylina, A., et al. 2021. Generation of fourteen isogenic cell lines for Parkinson's disease-associated leucine-rich repeat kinase (LRRK2). *Stem Cell Res.* 53: 102354.
9. Leggieri, A., et al. 2022. Neuronal phenotype of col4a1 and col25a1: an intriguing hypothesis in vertebrates brain aging. *Int. J. Mol. Sci.* 23: 1778.

CONJUGATES

See **MAP-2 (A-4): sc-74421** for MAP-2 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.