SANTA CRUZ BIOTECHNOLOGY, INC.

MAP-2 (A-4): sc-74421

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.

CHROMOSOMAL LOCATION

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

SOURCE

MAP-2 (A-4) is a mouse monoclonal antibody raised against amino acids 1-300 of MAP-2 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-2 (A-4) is available conjugated to agarose (sc-74421 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74421 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74421 PE), fluorescein (sc-74421 FITC), Alexa Fluor® 488 (sc-74421 AF488), Alexa Fluor® 546 (sc-74421 AF546), Alexa Fluor® 594 (sc-74421 AF594) or Alexa Fluor® 647 (sc-74421 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74421 AF680) or Alexa Fluor® 790 (sc-74421 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MAP-2 (A-4) 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.

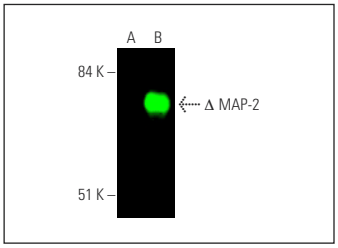
Molecular Weight of MAP-2 low molecular weight isoform: 70 kDa.

Positive Controls: MAP-2 (m): 293T Lysate: sc-121505, SK-N-SH cell lysate: sc-2410 or mouse brain extract: sc-2253.

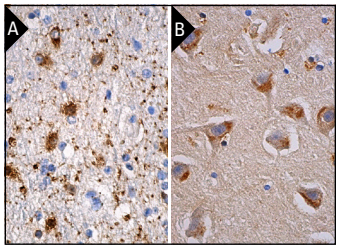
STORAGE

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-4): sc-74421. Near-infrared western blot analysis of MAP-2 expression in non-transfected: sc-117752 (**A**) and mouse MAP-2 transfected: sc-121505 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516180.



MAP-2 (A-4): sc-74421. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic and nuclear staining of neuronal cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells (**B**).

SELECT PRODUCT CITATIONS

1. Neal, A.P., et al. 2010. Lead exposure during synaptogenesis alters vesicular proteins and impairs vesicular release: potential role of NMDA receptor-dependent BDNF signaling. Toxicol. Sci. 116: 249-263.
2. Neal, A.P., et al. 2012. Enhanced nitric oxide production during lead (Pb^{2+}) exposure recovers protein expression but not presynaptic localization of synaptic proteins in developing hippocampal neurons. Brain Res. 1439: 88-95.
3. Wen, M., et al. 2015. Upregulation of RBFOX1 in the malformed cortex of patients with intractable epilepsy and in cultured rat neurons. Int. J. Mol. Med. 35: 597-606.
4. Moruno-Manchon, J.F., et al. 2016. TFEB ameliorates the impairment of the autophagy-lysosome pathway in neurons induced by doxorubicin. Aging 8: 3507-3519.
5. Moruno-Manchon, J.F., et al. 2017. Inhibiting sphingosine kinase 2 mitigates mutant Huntingtin-induced neurodegeneration in neuron models of Huntington disease. Hum. Mol. Genet. 26: 1305-1317.
6. Roque, C. and Baltazar, G. 2017. Impact of astrocytes on the injury induced by *in vitro* ischemia. Cell. Mol. Neurobiol. 37: 1521-1528.
7. Fukuda, T., et al. 2018. The poly-cistronic expression of four transcriptional factors (CRX, RAX, NEURO-D, OTX2) in fibroblasts via retro- or lentivirus causes partial reprogramming into photoreceptor cells. Cell Biol. Int. 42: 608-614.
8. Farzi-Molan, A., et al. 2018. Down-regulation of the non-coding RNA H19 and its derived miR-675 is concomitant with up-regulation of Insulin-like growth factor receptor type 1 during neural-like differentiation of human bone marrow mesenchymal stem cells. Cell Biol. Int. 42: 940-948.

RESEARCH USE

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