SANTA CRUZ BIOTECHNOLOGY, INC.

MAP-4 (H-300): sc-67152

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Microtubules, the primary component of the 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 MAP proteins function to stimulate tubulin assembly, enhance microtubule stability, influence the spatial distribution of microtubules within cells and utilize microtubule polarity to translocate cellular components. MAP-4 is a non-neuronal microtubule-associated protein that contains three 18-amino acid repeats that are homologous to the repeats found in several other Map proteins. Studies have shown that MAP-4 is involved with interphase microtubule, mitotic spindle fibers and mitotic movements. The protein, which promotes microtubule assembly, is primarily expressed in kidney, lung, liver, testis and spleen.

REFERENCES

1. Chapin, S.J., et al. 1991. Non-neuronal 210 x 10^3 Mr microtubule-associated protein (MAP4) contains a domain homologous to the microtubule-binding domains of neuronal MAP2 and Tau. J. Cell. Sci. 9827-9836.
2. West, R.R., et al. 1991. A model for microtubule-associated protein 4 structure. Domains defined by comparisons of human, mouse, and bovine sequences. J. Biol. Chem. 266: 21886-21896.
3. Mangan, M.E., et al. 1996. A muscle-specific variant of microtubule-associated protein 4 (MAP4) is required in myogenesis. Development 122: 771-781.
4. Kumarapeli, A.R. and Wang, X. 2004. Genetic modification of the heart: chaperones and the cytoskeleton. J. Mol. Cell. Cardiol. 37: 1097-1109.
5. Kokkinakis, D.M., et al. 2004. Modulation of gene expression in human central nervous system tumors under methionine deprivation-induced stress. Cancer Res. 64: 7513-7525.
6. Li, C., et al. 2004. *In vitro* study of cell-promoting multiple-armed peptides. J. Biomed. Mater. Res. A. 71: 134-142.
7. Liang, Y.C., et al. 2005. Characterization of long-term potentiation of primary afferent transmission at trigeminal synapses of juvenile rats: essential role of subtype 5 metabotropic glutamate receptors. Pain 114: 417-428.
8. Cheng, G., et al. 2005. Inhibition of β-adrenergic receptor trafficking in adult cardiocytes by MAP4 decoration of microtubules. Am. J. Physiol. Heart Circ. Physiol. 288: H1193-H1202.

CHROMOSOMAL LOCATION

Genetic locus: MAP4 (human) mapping to 3p21.31.

SOURCE

MAP-4 (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MAP-4 of human origin.

STORAGE

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

PRODUCT

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

APPLICATIONS

MAP-4 (H-300) is recommended for detection of MAP-4 isoforms 1 and 2 of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MAP-4 siRNA (h): sc-106198, MAP-4 shRNA Plasmid (h): sc-106198-SH and MAP-4 shRNA (h) Lentiviral Particles: sc-106198-V.

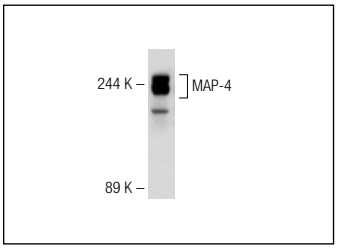
Molecular Weight of MAP-4: 210 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Hep G2 cell lysate: sc-2227 or A549 cell lysate: sc-2413.

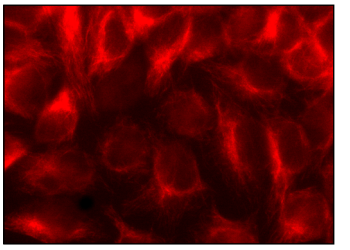
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MAP-4 (H-300): sc-67152. Western blot analysis of MAP-4 expression in 293T whole cell lysate.



MAP-4 (H-300): sc-67152. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.