SANTA CRUZ BIOTECHNOLOGY, INC.

MAP-4 (A-3): sc-365011

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 M_r microtubule-associated protein (MAP-4) contains a domain homologous to the microtubule-binding domains of neuronal MAP-2 and Tau. J. Cell Sci. 98: 27-36.
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 (MAP-4) 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.

CHROMOSOMAL LOCATION

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

SOURCE

MAP-4 (A-3) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MAP-4 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.

STORAGE

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

APPLICATIONS

MAP-4 (A-3) is recommended for detection of MAP-4 isoform 1 and 2 of 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-4 siRNA (h): sc-106198, MAP-4 shRNA Plasmid (h): sc-106198-SH and MAP-4 shRNA (h) Lentiviral Particles: sc-106198-V.

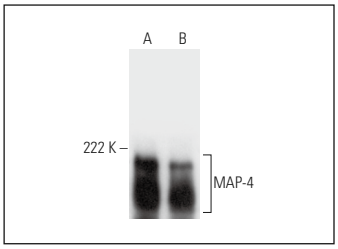
Molecular Weight of MAP-4: 210 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

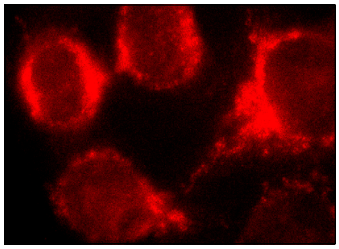
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MAP-4 (A-3): sc-365011. Western blot analysis of MAP-4 expression in HeLa (**A**) and Caki-1 (**B**) whole cell lysates.



MAP-4 (A-3): sc-365011. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Li, L., et al. 2014. Comparison of cancer cell survival triggered by microtubule damage after turning Dyrk1B kinase on and off. ACS Chem. Biol. 9: 731-742.
2. Zhou, Z., et al. 2015. The p38/mitogen-activated protein kinase pathway is implicated in lipopolysaccharide-induced microtubule depolymerization via up-regulation of microtubule-associated protein 4 phosphorylation in human vascular endothelium. Surgery 157: 590-598.

RESEARCH USE

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