SANTA CRUZ BIOTECHNOLOGY, INC.

MAP-4 (G-10): sc-390286

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 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.

CHROMOSOMAL LOCATION

Genetic locus: MAP4 (human) mapping to 3p21.31; Map4 (mouse) mapping to 9 F2.

SOURCE

MAP-4 (G-10) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MAP-4 of mouse 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.

MAP-4 (G-10) is available conjugated to agarose (sc-390286 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390286 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390286 PE), fluorescein (sc-390286 FITC), Alexa Fluor® 488 (sc-390286 AF488), Alexa Fluor® 546 (sc-390286 AF546), Alexa Fluor® 594 (sc-390286 AF594) or Alexa Fluor® 647 (sc-390286 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390286 AF680) or Alexa Fluor® 790 (sc-390286 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MAP-4 (G-10) is recommended for detection of MAP-4 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) 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 siRNA (m): sc-77385, MAP-4 shRNA Plasmid (h): sc-106198-SH, MAP-4 shRNA Plasmid (m): sc-77385-SH, MAP-4 shRNA (h) Lentiviral Particles: sc-106198-V and MAP-4 shRNA (m) Lentiviral Particles: sc-77385-V.

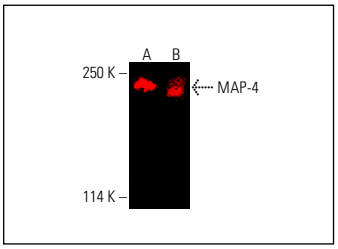
Molecular Weight of MAP-4: 210 kDa.

Positive Controls: KNRK nuclear extract: sc-2141 or HeLa nuclear extract: sc-2120.

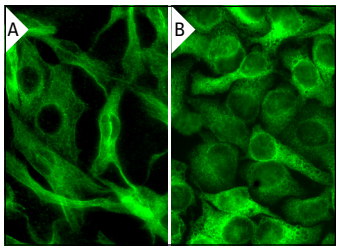
RECOMMENDED SUPPORT REAGENTS

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 (G-10): sc-390286. Near-Infrared western blot analysis of MAP-4 expression in KNRK (**A**) and HeLa (**B**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 790: sc-542740.



MAP-4 (G-10): sc-390286. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoskeletal localization (**A**). Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Thapa, N., et al. 2020. Phosphatidylinositol-3-OH kinase signalling is spatially organized at endosomal compartments by microtubule-associated protein 4. Nat. Cell Biol. 22: 1357-1370.
2. Wang, L., et al. 2022. Regulators of Tubulin polyglutamylation control nuclear shape and cilium disassembly by balancing microtubule and Actin assembly. Cell Res. 32: 190-209.
3. Chu, S., et al. 2022. Multiple pathways promote microtubule stabilization in senescent intestinal epithelial cells. NPJ Aging 8: 16.
4. Cao, X., et al. 2022. Proximity labeling reveals spatial regulation of the anaphase-promoting complex/cyclosome by a microtubule adaptor. ACS Chem. Biol. 17: 2605-2618.
5. Thapa, N., et al. 2024. A p85 isoform switch enhances PI3K activation on endosomes by a MAP4- and PI3P-dependent mechanism. Cell Rep. 43: 114119.

STORAGE

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

RESEARCH USE

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