SANTA CRUZ BIOTECHNOLOGY, INC.

CAP2 (NN12): sc-100916



BACKGROUND

Cyclase-associated proteins (CAPs) are a family of evolutionary conserved proteins that participate in signal transduction and function to regulate events associated with the Actin cytoskeleton. CAP1 and CAP2 (adenylate cyclase-associated protein 1 and 2, respectively) are two members of the CAP family, both of which localize to the cell membrane and contain one C-CAP/cofactor C-like domain. CAP1 is involved in the regulation of Actin filaments and is thought to mediate processes such as establishment of cell polarity and mRNA localization, while CAP2 has a bifunctional regulatory role and can interact directly with Actin. Although CAP1 is expressed throughout the body, CAP2 is predominately expressed in skin, brain, heart and skeletal muscle. Over-expression of CAP2 is associated with hepatocellular carcinoma, suggesting a possible role for CAP2 in carcinogenesis.

REFERENCES

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- 2. Yu, G., et al. 1994. Comparison of human CAP and CAP2, homologs of the yeast adenylyl cyclase-associated proteins. J. Cell Sci. 107: 1671-1678.
- Hubberstey, A., et al. 1996. Mammalian CAP interacts with CAP, CAP2 and Actin. J. Cell. Biochem. 61: 459-466.
- Moriyama, K. and Yahara, I. 2002. Human CAP1 is a key factor in the recycling of Cofilin and Actin for rapid Actin turnover. J. Cell Sci. 115: 1591-1601.
- Dodatko, T., et al. 2004. Crystal structure of the Actin binding domain of the cyclase-associated protein. Biochemistry 43: 10628-10641.
- Bertling, E., et al. 2004. Cyclase-associated protein 1 (CAP1) promotes Cofilin-induced Actin dynamics in mammalian nonmuscle cells. Mol. Biol. Cell 15: 2324-2334.
- 7. Shibata, R., et al. 2006. Overexpression of cyclase-associated protein 2 in multistage hepatocarcinogenesis. Clin. Cancer Res. 12: 5363-5368.
- 8. Peche, V., et al. 2007. CAP2, cyclase-associated protein 2, is a dual compartment protein. Cell. Mol. Life Sci. 64: 2702-2715.

CHROMOSOMAL LOCATION

Genetic locus: CAP2 (human) mapping to 6p22.3.

SOURCE

CAP2 (NN12) is a mouse monoclonal antibody raised against recombinant CAP2 of human origin.

PRODUCT

Each vial contains 100 $\mu g~lgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

CAP2 (NN12) is recommended for detection of CAP2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 CAP2 siRNA (h): sc-95443, CAP2 shRNA Plasmid (h): sc-95443-SH and CAP2 shRNA (h) Lentiviral Particles: sc-95443-V.

Molecular Weight of CAP2: 53 kDa.

Positive Controls: C32 whole cell lysate: sc-2205.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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





CAP2 (NN12): sc-100916. Western blot analysis of CAP2 expression in C32 whole cell lysate.

CAP2 (NN12): sc-100916. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

 Yoon, S., et al. 2021. Endoplasmic reticulum stress induces CAP2 expression promoting epithelial-mesenchymal transition in liver cancer cells. Mol. Cells 44: 569-579.

STORAGE

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

PROTOCOLS

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