

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

1. Matviw, H., Yu, G. and Young, D. 1992. Identification of a human cDNA encoding a protein that is structurally and functionally related to the yeast adenylyl cyclase-associated CAP proteins. *Mol. Cell. Biol.* 12: 5033-5040.
2. Yu, G., Swiston, J. and Young, D. 1994. Comparison of human CAP and CAP2, homologs of the yeast adenylyl cyclase-associated proteins. *J. Cell Sci.* 107: 1671-1678.
3. Hubberstey, A., Yu, G., Loewith, R., Lakusta, C. and Young, D. 1996. Mammalian CAP interacts with CAP, CAP2 and Actin. *J. Cell. Biochem.* 61: 459-466.
4. 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.
5. Dodatko, T., Fedorov, A.A., Grynberg, M., Patskovsky, Y., Rozwarski, D.A., Jaroszewski, L., Aronoff-Spencer, E., Kondraskina, E., Irving, T., Godzik, A. and Almo, S.C. 2004. Crystal structure of the Actin binding domain of the cyclase-associated protein. *Biochemistry* 43: 10628-10641.
6. Bertling, E., Hotulainen, P., Mattila, P.K., Matilainen, T., Salminen, M. and Lappalainen, P. 2004. Cyclase-associated protein 1 (CAP1) promotes Cofilin-induced Actin dynamics in mammalian nonmuscle cells. *Mol. Biol. Cell* 15: 2324-2334.

CHROMOSOMAL LOCATION

Genetic locus: CAP2 (human) mapping to 6p22.3; Cap2 (mouse) mapping to 13 A5.

SOURCE

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

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 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 CAP2 siRNA (h): sc-95443, CAP2 shRNA Plasmid (h): sc-95443-SH and CAP2 shRNA (h) Lentiviral Particles: sc-95443-V.

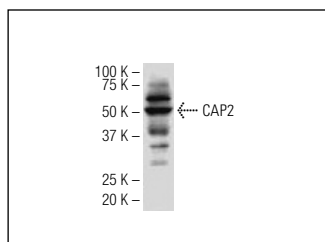
Molecular Weight of CAP2: 53 kDa.

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

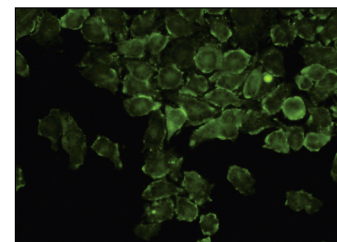
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-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, 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 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



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.

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.

PROTOCOLS

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