SANTA CRUZ BIOTECHNOLOGY, INC.

rhophilin (F-7): sc-166302

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rho, the Ras-related small GTPase, is responsible for the regulation of Actin-based cytoskeletal structures, including stress fibers, focal adhesions and the contractile ring apparatus. Rho proteins act as molecular switches which are able to turn cytokinesis on and off. Although little is known about signaling downstream of Rho, several proteins have been implicated as Rho effectors. Protein kinase N (PKN) is a fatty acid-activated serine/threonine kinase whose catalytic domain exhibits homology with that of the PKC family. PKN associates with Rho via its amino-terminus, is activated in a GTP-dependent manner and phosphorylates the head-rod domain of neurofilament proteins. A second protein, rhophilin, exhibits 40% sequence identity with the amino-terminal Rho binding domain. The enzymatic activity of rhophilin has not been demonstrated and it is possible that it acts through the recruitment of cytoskeletal components that initiate a kinase signaling cascade. Citron interacts specifically with active Rho and Rac 1 but not Cdc42. Citron exhibits a distinctive protein organization and little homology with the Rho binding domains of PKN and rhophilin.

REFERENCES

1. Madaule, P., et al. 1995. A novel partner for the GTP-bound forms of Rho and Rac. FEBS Lett. 377: 243-248.
2. Kitagawa, M., et al. 1995. Purification and characterization of a fatty acid-activated protein kinase (PKN) from rat testis. Biochem. J. 310: 657-664.
3. Mukai, H., et al. 1996. PKN associates and phosphorylates the head-rod domain of neurofilament protein. J. Biol. Chem. 271: 9816-9822.
4. Shibata, H., et al. 1996. Characterization of the interaction between Rho A and the amino-terminal region of PKN. FEBS Lett. 385: 221-224.
5. Kitagawa, M., et al. 1996. The role of the unique motifs in the amino-terminal region of PKN on its enzymatic activity. Biochem. Biophys. Res. Commun. 220: 963-968.

CHROMOSOMAL LOCATION

Genetic locus: RHPN1 (human) mapping to 8q24.3.

SOURCE

rhophilin (F-7) is a mouse monoclonal antibody raised against amino acids 119-194 mapping near the N-terminus of rhophilin isoform 3 of human 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.

rhophilin (F-7) is available conjugated to agarose (sc-166302 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166302 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166302 PE), fluorescein (sc-166302 FITC), Alexa Fluor® 488 (sc-166302 AF488), Alexa Fluor® 546 (sc-166302 AF546), Alexa Fluor® 594 (sc-166302 AF594) or Alexa Fluor® 647 (sc-166302 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166302 AF680) or Alexa Fluor® 790 (sc-166302 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

rhophilin (F-7) is recommended for detection of rhophilin 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 rhophilin siRNA (h): sc-39221, rhophilin shRNA Plasmid (h): sc-39221-SH and rhophilin shRNA (h) Lentiviral Particles: sc-39221-V.

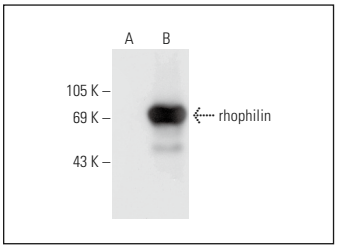
Molecular Weight of rhophilin: 71 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or rhophilin (h): 293T Lysate: sc-114163.

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



rhophilin (F-7): sc-166302. Western blot analysis of rhophilin expression in non-transfected: sc-117752 (**A**) and human rhophilin transfected: sc-114163 (**B**) 293T whole cell lysates.

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.