

# rhophilin (H-76): sc-21002

## 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 protein. 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, a large protein with a predicted molecular weight of 183 kDa, 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

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- Kitagawa, M., Mukai, H., Shibata, H. and Ono, Y. 1995. Purification and characterization of a fatty acid-activated protein kinase (PKN) from rat testis. *Biochem. J.* 310: 657-664.
- Mukai, H., Toshimori, M., Shibata, H., Kitagawa, M., Shimakawa, M., Miyahara, M., Sunakawa, H. and Ono, Y. 1996. PKN associates and phosphorylates the head-rod domain of neurofilament protein. *J. Biol. Chem.* 271: 9816-9822.
- Shibata, H., Mukai, H., Inagaki, Y., Homma, Y., Kimura, K., Kaibuchi, K., Narumiya, S. and Ono, Y. 1996. Characterization of the interaction between RhoA and the amino-terminal region of PKN. *FEBS Letts.* 385: 221-224.

## CHROMOSOMAL LOCATION

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

## SOURCE

rhophilin (H-76) is a rabbit polyclonal 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 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

rhophilin (H-76) is recommended for detection of rhophilin 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 rhophilin siRNA (h): sc-39221, rhophilin shRNA Plasmid (h): sc-39221-SH and rhophilin shRNA (h) Lentiviral Particles: sc-39221-V.

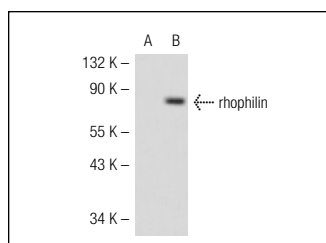
Molecular Weight of rhophilin: 71 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



rhophilin (H-76): sc-21002. Western blot analysis of rhophilin expression in non-transfected: sc-117752 (A) and human rhophilin transfected: sc-114163 (B) 293T whole cell lysates.

## RESEARCH USE

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


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Try **rhophilin (F-7): sc-166302**, our highly recommended monoclonal alternative to rhophilin (H-76).