



## rhophilin-2 (P-18): sc-55030

### 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 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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2. Peck, J.W., Oberst, M., Bouker, K.B., Bowden, E. and Burbelo, P.D. 2002. The Rho A-binding protein, rhophilin-2, regulates Actin cytoskeleton organization. *J. Biol. Chem.* 277: 43924-43932.
3. Peck, J.W., Bowden, E.T. and Burbelo, P.D. 2004. Structure and function of human Vps20 and Snf7 proteins. *Biochem. J.* 377: 693-700.
4. Behrends, J., Clément, S., Pajak, B., Pohl, V., Maenhaut, C., Dumont, J.E. and Schurmans, S. 2005. Normal thyroid structure and function in rhophilin-2-deficient mice. *Mol. Cell. Biol.* 25: 2846-2852.
5. Steuve, S., Devosse, T., Lauwers, E., Vanderwinden, J.M., André, B., Courtot, P.J. and Pirson, I. 2006. rhophilin-2 is targeted to late-endosomal structures of the vesicular machinery in the presence of activated Rho B. *Exp. Cell Res.* 312: 3981-3989.

### CHROMOSOMAL LOCATION

Genetic locus: RHPN2 (human) mapping to 19q13.11; Rhpn2 (mouse) mapping to 7 B2.

### SOURCE

rhophilin-2 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of rhophilin-2 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.

Blocking peptide available for competition studies, sc-55030 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

rhophilin-2 (P-18) is recommended for detection of rhophilin-2 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-2 siRNA (h): sc-62938, rhophilin-2 siRNA (m): sc-62939, rhophilin-2 shRNA Plasmid (h): sc-62938-SH, rhophilin-2 shRNA Plasmid (m): sc-62939-SH, rhophilin-2 shRNA (h) Lentiviral Particles: sc-62938-V and rhophilin-2 shRNA (m) Lentiviral Particles: sc-62939-V.

Molecular Weight of rhophilin-2: 77 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.