SANTA CRUZ BIOTECHNOLOGY, INC.

PKN (A-8): sc-7969

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 know 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 Rac1 but not Cdc42. Citron exhibits a distinctive protein organization and little homology with the Rho binding domains of PKN and rhophilin.

REFERENCES

1. Kitagawa, M., et al. 1995. Purification and characterization of a fatty acid-activated protein kinase (PKN) from rat testis. Biochem. J. 310: 657-664.
2. Madaule, P., et al. 1995. A novel partner for the GTP-bound forms of Rho and Rac. FEBS Lett. 377: 243-248.
3. Amano, M., et al. 1996. Identification of a putative target for Rho as the serine-threonine kinase protein kinase N. Science 271: 648-650.

CHROMOSOMAL LOCATION

Genetic locus: PKN1 (human) mapping to 19p13.12.

SOURCE

PKN (A-8) is a mouse monoclonal antibody raised against amino acids 569-803 mapping at the C-terminus of PKN of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PKN (A-8) is recommended for detection of PKN 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 PKN siRNA (h): sc-36261, PKN shRNA Plasmid (h): sc-36261-SH and PKN shRNA (h) Lentiviral Particles: sc-36261-V.

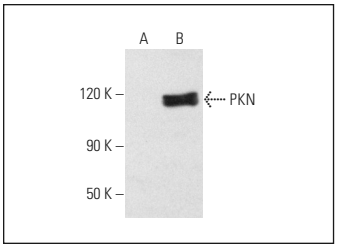
Molecular Weight of PKN: 120 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, PKN-transfected COS whole cell lysate or H4 cell lysate: sc-2408.

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



PKN (A-8): sc-7969. Western blot analysis of PKN expression in non-transfected (**A**) and PKN-transfected (**B**) COS whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lartey, J., et al. 2007. Up-regulation of myometrial Rho effector proteins (PKN1 and DIAPH1) and CPI-17 (PPP1R14A) phosphorylation in human pregnancy is associated with increased GTP-Rho A in spontaneous preterm labor. Biol. Reprod. 76: 971-982.
2. Fu, X.D., et al. 2008. Extra-nuclear signaling of progesterone receptor to breast cancer cell movement and invasion through the Actin cytoskeleton. PLoS ONE 3: e2790.
3. Sanchez, A.M., et al. 2010. Estrogen receptor-α promotes breast cancer cell motility and invasion via focal adhesion kinase and N-WASP. Mol. Endocrinol. 24: 2114-2125.

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.