SANTA CRUZ BIOTECHNOLOGY, INC.

PKN (H-4): sc-393344

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; Pkn1 (mouse) mapping to 8 C2.

SOURCE

PKN (H-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 923-942 at the C-terminus of PKN of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PKN (H-4) is available conjugated to agarose (sc-393344 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393344 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393344 PE), fluorescein (sc-393344 FITC), Alexa Fluor® 488 (sc-393344 AF488), Alexa Fluor® 546 (sc-393344 AF546), Alexa Fluor® 594 (sc-393344 AF594) or Alexa Fluor® 647 (sc-393344 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393344 AF680) or Alexa Fluor® 790 (sc-393344 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393344 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

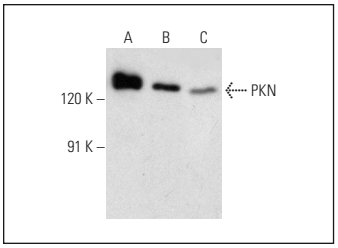
PKN (H-4) is recommended for detection of PKN of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PKN siRNA (h): sc-36261, PKN siRNA (m): sc-36262, PKN shRNA Plasmid (h): sc-36261-SH, PKN shRNA Plasmid (m): sc-36262-SH, PKN shRNA (h) Lentiviral Particles: sc-36261-V and PKN shRNA (m) Lentiviral Particles: sc-36262-V.

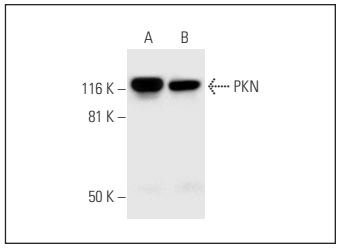
Molecular Weight of PKN: 120 kDa.

Positive Controls: I-11.15 whole cell lysate: sc-364370, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

DATA



PKN (H-4): sc-393344. Western blot analysis of PKN expression in LNCaP (**A**), I-11.15 (**B**) and PC-12 (**C**) whole cell lysates.



PKN (H-4): sc-393344. Western blot analysis of PKN expression in Jurkat (**A**) and HL-60 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Park, Y.H., et al. 2016. Pyrin inflammasome activation and RhoA signaling in the autoinflammatory diseases FMF and HIDS. Nat. Immunol. 17: 914-921.
2. Ding, Y., et al. 2017. Di-n-butyl phthalate exposure negatively influences structural and functional neuroplasticity via Rho-GTPase signaling pathways. Food Chem. Toxicol. 105: 34-43.
3. Zeng, R., et al. 2020. Cyclin-dependent kinase 1-mediated phosphorylation of protein kinase N1 promotes anchorage-independent growth and migration. Cell. Signal. 69: 109546.

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.