

# PKN $\beta$ (A-14): sc-67770

## BACKGROUND

PKN $\beta$  (protein kinase PKN $\beta$ ) also known as PKN3, is a protein kinase-related molecule belonging to the AGC serine/threonine protein kinase family. It contains one protein kinase domain, three REM repeats and one AGC-kinase domain at its C-terminus. PKN $\beta$  is not expressed in normal adult tissues but is found in prostate tumors and various other cancer cell lines localizing to the nucleus and the perinuclear region of the cytoplasm. PKN $\beta$  may play a role in the invasiveness of malignant prostate cancer. This is suggested by the impaired growth and reduced metastases formation after knockdown of PKN $\beta$  expression in mouse prostate tumor cells. PKN $\beta$  expression and activity is regulated by PI 3-kinase. In humans, the phosphorylation of PKN $\beta$  at Thr718 and Thr860 is required for the activation of its kinase activity.

## REFERENCES

- Oishi, K., et al. 1999. Identification and characterization of PKN $\beta$ , a novel isoform of protein kinase PKN: expression and arachidonic acid dependency are different from those of PKN $\alpha$ . *Biochem. Biophys. Res. Commun.* 261: 808-814.
- Shibata, H., et al. 2001. PKN $\beta$  interacts with the SH3 domains of Graf and a novel Graf related protein, Graf2, which are GTPase activating proteins for Rho family. *J. Biochem.* 130: 23-31.
- Oishi, K., et al. 2001. PKN regulates phospholipase D1 through direct interaction. *J. Biol. Chem.* 276: 18096-18101.
- Online Mendelian Inheritance in Man, OMIM<sup>TM</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610714. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Leenders, F., et al. 2004. PKN3 is required for malignant prostate cell growth downstream of activated PI 3-kinase. *EMBO J.* 23: 3303-3313.
- Mukai, H., et al. 2006. Purification and kinase assay of PKN. *Methods Enzymol.* 406: 234-250.
- Wissing, J., et al. 2007. Proteomics analysis of protein kinases by target class-selective prefractionation and tandem mass spectrometry. *Mol. Cell Proteomics* 6: 537-547.

## CHROMOSOMAL LOCATION

Genetic locus: PKN3 (human) mapping to 9q34.11; Pkn3 (mouse) mapping to 2 B.

## SOURCE

PKN $\beta$  (A-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PKN $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-67770 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PKN $\beta$  (A-14) is recommended for detection of PKN $\beta$  of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

PKN $\beta$  (A-14) is also recommended for detection of PKN $\beta$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PKN $\beta$  siRNA (h): sc-62822, PKN $\beta$  siRNA (m): sc-62823, PKN $\beta$  shRNA Plasmid (h): sc-62822-SH, PKN $\beta$  shRNA Plasmid (m): sc-62823-SH, PKN $\beta$  shRNA (h) Lentiviral Particles: sc-62822-V and PKN $\beta$  shRNA (m) Lentiviral Particles: sc-62823-V.

Molecular Weight of PKN $\beta$ : 99 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<sup>TM</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>TM</sup> 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 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<sup>TM</sup> Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

- Singh, N.K., et al. 2012. Protein kinase N1 is a novel substrate of NFATc1-mediated cyclin D1-CDK6 activity and modulates vascular smooth muscle cell division and migration leading to inward blood vessel wall remodeling. *J. Biol. Chem.* 287: 36291-36304.

## STORAGE

Store at 4 $^{\circ}$  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.