SANTA CRUZ BIOTECHNOLOGY, INC.

PRKX (M-67): sc-67383

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. PRKX (protein kinase, X-linked), also known as PKX1, is a 358 amino acid member of the AGC Ser/Thr protein kinase family and belongs to the subfamily of cAMP-dependent kinases. Highly expressed in adult and fetal brain, lung and kidney with lower expression in adult heart, pancreas, liver, placenta, skeletal muscle and fetal liver, PRKX is developmentally regulated and contains one protein kinase domain and one C-terminal AGC-kinase domain. PRKX is essential for macrophage differentiation and participates in renal epithelial cell migration. Disruption of the gene encoding PRKX due to a chromosomal aberration can result in sex reversal disorder.

REFERENCES

1. Klink, A., et al. 1995. The human protein kinase gene PKX1 on Xp22.3 displays Xp/Yp homology and is a site of chromosomal instability. Hum. Mol. Genet. 4: 869-878.
2. Schiebel, K., et al. 1997. FISH localization of the human Y-homolog of protein kinase PRKX (PRKY) to Yp11.2 and two pseudogenes to 15q26 and Xq12→q13. Cytogenet. Cell Genet. 76: 49-52.
3. Li, X., et al. 2002. PRKX, a phylogenetically and functionally distinct cAMP-dependent protein kinase, activates renal epithelial cell migration and morphogenesis. Proc. Natl. Acad. Sci. USA 99: 9260-9265.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300083. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Li, X., et al. 2005. Protein kinase X activates ureteric bud branching morphogenesis in developing mouse metanephric kidney. J. Am. Soc. Nephrol. 16: 3543-3552.
6. Li, W., et al. 2005. Profiles of PRKX expression in developmental mouse embryo and human tissues. J. Histochem. Cytochem. 53: 1003-1009.
7. Glesne, D. and Huberman, E. 2006. Smad6 is a protein kinase X phosphorylation substrate and is required for HL-60 cell differentiation. Oncogene 25: 4086-4098.
8. Diskar, M., et al. 2007. Molecular basis for isoform-specific autoregulation of protein kinase A. Cell. Signal. 19: 2024-2034.
9. Li, X., et al. 2008. Protein kinase X (PRKX) can rescue the effects of polycystic kidney disease 1 gene (PKD1) deficiency. Biochim. Biophys. Acta 1782: 1-9.

CHROMOSOMAL LOCATION

Genetic locus: Prkx (mouse) mapping to XqA7.3.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

SOURCE

PRKX (M-67) is a rabbit polyclonal antibody raised against amino acids 61-127 mapping near the N-terminus of PRKX of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PRKX (M-67) is recommended for detection of PRKX of mouse and rat 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 PRKX siRNA (m): sc-108005.

Molecular Weight of PRKX: 41 kDa.

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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.