SANTA CRUZ BIOTECHNOLOGY, INC.

PKC (A-3): sc-17769

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the protein kinase C (PKC) family play a key regulatory role in a variety of cellular functions including cell growth and differentiation, gene expression, hormone secretion and membrane function. PKCs were originally identified as serine/threonine protein kinases whose activity was dependent on calcium and phospholipids. Diacylglycerols (DAG) and tumor promoting phorbol esters bind to and activate PKC. PKCs can be subdivided into many different isoforms (α, βI, βII, γ, δ, ε, ζ, η, θ, ι, λ, μ and ν). Patterns of expression for each PKC isoform differ among tissues and PKC family members exhibit clear differences in their cofactor dependencies. For instance, the kinase activities of PKC δ and ε are independent of Ca^{2+}. On the other hand, most of the other PKC members possess phorbol ester-binding activities and kinase activities.

SOURCE

PKC (A-3) is a mouse monoclonal antibody raised against amino acids 373-672 of PKC α of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PKC (A-3) is available conjugated to agarose (sc-17769 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17769 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17769 PE), fluorescein (sc-17769 FITC), Alexa Fluor® 488 (sc-17769 AF488), Alexa Fluor® 546 (sc-17769 AF546), Alexa Fluor® 594 (sc-17769 AF594) or Alexa Fluor® 647 (sc-17769 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17769 AF680) or Alexa Fluor® 790 (sc-17769 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PKC (A-3) is recommended for detection of PKC family members of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:1,000), 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), immunohistochemistry (including paraffin-embedded sections) (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 PKC siRNA (h): sc-29449, PKC shRNA Plasmid (h): sc-29449-SH and PKC shRNA (h) Lentiviral Particles: sc-29449-V.

Molecular Weight of PKC: 80 kDa.

Positive Controls: 3611-RF whole cell lysate: sc-2215, NIH/3T3 whole cell lysate: sc-2210 or K-562 whole cell lysate: sc-2203.

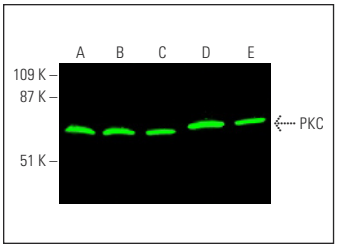
STORAGE

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

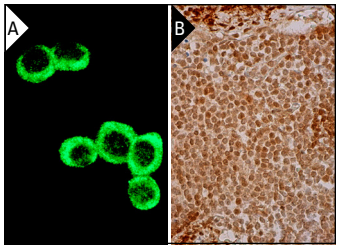
RESEARCH USE

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

DATA



PKC (A-3): sc-17769. Near-infrared western blot analysis of PKC expression in K-562 (**A**), NIH/3T3 (**B**), 3611-RF (**C**), Jurkat (**D**) and MOLT-4 (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



PKC (A-3): sc-17769. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal center and cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Wang, X., et al. 2005. FLIP protects against hypoxia/reoxygenation-induced endothelial cell apoptosis by inhibiting Bax activation. Mol. Cell. Biol. 25: 4742-4751.
2. Xu, X.X., et al. 2013. Superior renoprotective effects of the combination of breviscapine with enalapril and its mechanism in diabetic rats. Phytomedicine 20: 820-827.
3. Shih, C.H., et al. 2014. A critical role for the regulation of Syk from agglutination to aggregation in human platelets. Biochem. Biophys. Res. Commun. 443: 580-585.
4. Zhang, Y.B., et al. 2015. Gabapentin effects on PKC-ERK1/2 signaling in the spinal cord of rats with formalin-induced visceral inflammatory pain. PLoS ONE 10: e0141142.
5. Shen, J., et al. 2016. NMDA receptors participate in the progression of diabetic kidney disease by decreasing Cdc42-GTP activation in podocytes. J. Pathol. 240: 149-160.
6. Toricelli, M., et al. 2017. Timp1 promotes cell survival by activating the PDK1 signaling pathway in melanoma. Cancers 9: 37.
7. Zambrano, J.N., et al. 2018. Staurosporine, an inhibitor of hormonally up-regulated neu-associated kinase. Oncotarget 9: 35962-35973.
8. Inoue, D., et al. 2019. Spliceosomal disruption of the non-canonical BAF complex in cancer. Nature 574: 432-436.
9. Johnston, A.N., et al. 2020. Necroptosis-blocking compound NBC1 targets heat shock protein 70 to inhibit MLKL polymerization and necroptosis. Proc. Natl. Acad. Sci. USA 117: 6521-6530.

PROTOCOLS

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