SANTA CRUZ BIOTECHNOLOGY, INC.

PKC α (H-7): sc-8393

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, λ/ι, 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.

REFERENCES

1. Takai, Y., et al. 1979. Calcium-dependent activation of a multifunctional protein kinase by membrane phospholipids. J. Biol. Chem. 254: 3692-3695.
2. Castagna, M., et al. 1982. Direct activation of calcium-activated, phospholipid-dependent protein kinase by tumor-promoting phorbol esters. J. Biol. Chem. 257: 7847-7851.
3. Kikkawa, U., et al. 1983. Protein kinase C as a possible receptor of tumor-promoting phorbol esters. J. Biol. Chem. 258: 11442-11445.

CHROMOSOMAL LOCATION

Genetic locus: PRKCA (human) mapping to 17q24.2; Prkca (mouse) mapping to 11 E1.

SOURCE

PKC α (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 645-672 at the C-terminus of PKC α 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.

PKC α (H-7) is available conjugated to agarose (sc-8393 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8393 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8393 PE), fluorescein (sc-8393 FITC), Alexa Fluor® 488 (sc-8393 AF488), Alexa Fluor® 546 (sc-8393 AF546), Alexa Fluor® 594 (sc-8393 AF594) or Alexa Fluor® 647 (sc-8393 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8393 AF680) or Alexa Fluor® 790 (sc-8393 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8393 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

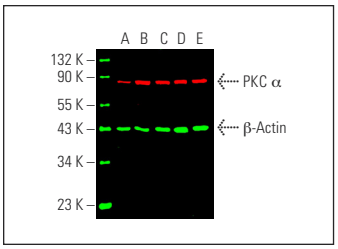
PKC α (H-7) is recommended for detection of PKC α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 α siRNA (h): sc-36243, PKC α siRNA (m): sc-36244, PKC α siRNA (r): sc-108089, PKC α shRNA Plasmid (h): sc-36243-SH, PKC α shRNA Plasmid (m): sc-36244-SH, PKC α shRNA Plasmid (r): sc-108089-SH, PKC α shRNA (h) Lentiviral Particles: sc-36243-V, PKC α shRNA (m) Lentiviral Particles: sc-36244-V and PKC α shRNA (r) Lentiviral Particles: sc-108089-V.

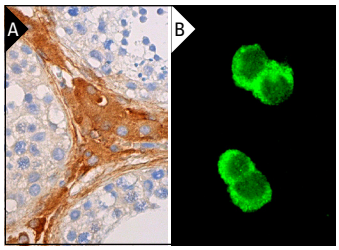
Molecular Weight of PKC α: 80 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, Jurkat whole cell lysate: sc-2204 or NIH/3T3 whole cell lysate: sc-2210.

DATA



Simultaneous direct near-infrared western blot analysis of PKC α expression, detected with PKC α (H-7) Alexa Fluor® 790: sc-8393 AF790 and β-Actin expression, detected with β-Actin (C4) Alexa Fluor® 680: sc-47778 AF680 in HeLa (**A**), Jurkat (**B**), MOLT-4 (**C**), NIH/3T3 (**D**) and 3611-RF (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.



PKC α (H-7): sc-8393. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of Leydig cell (**A**). Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic and membrane staining (**B**).

SELECT PRODUCT CITATIONS

1. Cross, T., et al. 2000. PKC δ is an apoptotic lamin kinase. Oncogene 19: 2331-2337.
2. Rosenberg, S., et al. 2018. A recurrent point mutation in PRKCA is a hallmark of chordoid gliomas. Nat. Commun. 9: 2371.
3. Liu, Y., et al. 2019. Mouse models of X-linked juvenile retinoschisis have an early onset phenotype, the severity of which varies with genotype. Hum. Mol. Genet. 28: 3072-3090.
4. Chen, W.C., et al. 2020. Resistin enhances VCAM-1 expression and monocyte adhesion in human osteoarthritis synovial fibroblasts by inhibiting MiR-381 expression through the PKC, p38, and JNK signaling pathways. Cells 9: 1369.

RESEARCH USE

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