SANTA CRUZ BIOTECHNOLOGY, INC.

PKC βII (F-7): sc-13149

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 at least two major classes, including conventional (c) PKC isoforms (α, βI, βII and γ) and novel (n) PKC isoforms (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.

CHROMOSOMAL LOCATION

Genetic locus: PRKCB (human) mapping to 16p12.2; Prkcb (mouse) mapping to 7 F3.

SOURCE

PKC βII (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 642-673 at the C-terminus of PKC βII 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 βII (F-7) is available conjugated to agarose (sc-13149 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13149 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13149 PE), fluorescein (sc-13149 FITC), Alexa Fluor® 488 (sc-13149 AF488), Alexa Fluor® 546 (sc-13149 AF546), Alexa Fluor® 594 (sc-13149 AF594) or Alexa Fluor® 647 (sc-13149 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13149 AF680) or Alexa Fluor® 790 (sc-13149 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-13149 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 βII (F-7) is recommended for detection of cPKC βII of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2000), 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

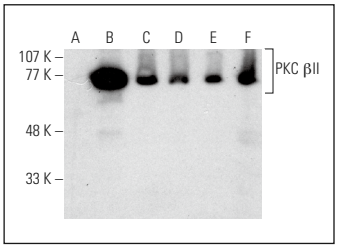
PKC βII (F-7) is also recommended for detection of cPKC βII in additional species, including bovine and porcine.

Suitable for use as control antibody for PKC βII siRNA (h): sc-39170, PKC β siRNA (m): sc-36255, PKC βII siRNA (r): sc-108095, PKC βII shRNA Plasmid (h): sc-39170-SH, PKC β shRNA Plasmid (m): sc-36255-SH, PKC βII shRNA Plasmid (r): sc-108095-SH, PKC βII shRNA (h) Lentiviral Particles: sc-39170-V, PKC β shRNA (m) Lentiviral Particles: sc-36255-V and PKC βII shRNA (r) Lentiviral Particles: sc-108095-V.

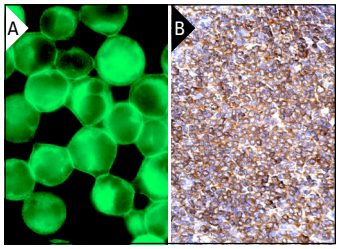
Molecular Weight of PKC βII: 80 kDa.

Positive Controls: PKC β (h2): 293T Lysate: sc-177741, K-562 whole cell lysate: sc-2203 or MOLT-4 cell lysate: sc-2233.

DATA



PKC βII (F-7) HRP: sc-13149 HRP. Direct western blot analysis of PKC βII expression in non-transfected 293T: sc-117752 (**A**), human PKC β transfected 293T: sc-177741 (**B**), K-562 (**C**), Jurkat (**D**) and MOLT-4 (**E**) whole cell lysates and mouse brain tissue extract (**F**).



PKC βII (F-7): sc-13149. Immunofluorescence staining of methanol-fixed K-562 cells showing cytoplasmic staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic staining of cells in white pulp (**B**).

SELECT PRODUCT CITATIONS

1. Carnevale, K.A., et al. 2003. Protein kinase C is required for human monocyte chemotaxis to MCP-1. J. Biol. Chem. 278: 25317-25322.
2. Sarode, A.Y., et al. 2020. Residue-specific message encoding in CD40-ligand. iScience 23: 101441.
3. Beręsewicz-Haller, M., et al. 2021. Mitochondrial metabolism behind region-specific resistance to ischemia-reperfusion injury in gerbil hippocampus. Role of PKC βII and phosphate-activated glutaminase. Int. J. Mol. Sci. 22: 8504.
4. Zhang, H.L., et al. 2022. PKC βII phosphorylates ACSL4 to amplify lipid peroxidation to induce ferroptosis. Nat. Cell Biol. 24: 88-98.

RESEARCH USE

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