

PKC β II (F-7): sc-13149

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 , β I, β II 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 β II (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 642-673 at the C-terminus of PKC β II of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PKC β II (F-7) is available conjugated to agarose (sc-13149 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13149 HRP), 200 μ g/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 μ g/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 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-13149 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

PKC β II (F-7) is recommended for detection of cPKC β II of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 μ g per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

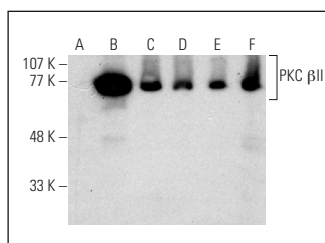
PKC β II (F-7) is also recommended for detection of cPKC β II in additional species, including bovine and porcine.

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

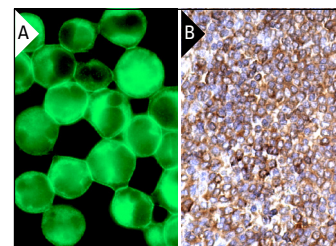
Molecular Weight of PKC β II: 80 kDa.

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 β II (F-7) HRP: sc-13149 HRP. Direct western blot analysis of PKC β II 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 β II (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. Xie, J.D., et al. 2017. Bortezomib induces neuropathic pain through protein kinase C-mediated activation of presynaptic NMDA receptors in the spinal cord. *Neuropharmacology* 123: 477-487.
3. Gotru, S.K., et al. 2018. Cutting edge: imbalanced cation homeostasis in MAGT1-deficient B cells dysregulates B cell development and signaling in mice. *J. Immunol.* 200: 2529-2534.
4. Zheng, W., et al. 2019. Carvedilol alleviates diabetic cardiomyopathy in diabetic rats. *Exp. Ther. Med.* 17: 479-487.

RESEARCH USE

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