

PKC β I (E-3): sc-8049

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 and θ). 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 nPKC δ and ϵ are independent of Ca^{2+} . On the other hand, nPKC δ and ϵ , as well as all of the cPKC 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 I (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 651-671 at the C-terminus of PKC β I of human origin.

PRODUCT

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

PKC β I (E-3) is available conjugated to agarose (sc-8049 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-8049 HRP), 200 μg /ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8049 PE), fluorescein (sc-8049 FITC), Alexa Fluor[®] 488 (sc-8049 AF488), Alexa Fluor[®] 546 (sc-8049 AF546), Alexa Fluor[®] 594 (sc-8049 AF594) or Alexa Fluor[®] 647 (sc-8049 AF647), 200 μg /ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-8049 AF680) or Alexa Fluor[®] 790 (sc-8049 AF790), 200 μg /ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8049 P, (100 μg 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 I (E-3) is recommended for detection of PKC β I 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).

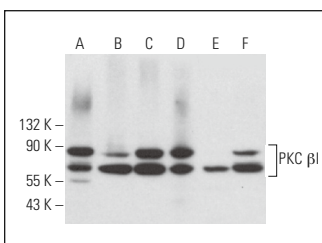
PKC β I (E-3) is also recommended for detection of PKC β I in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for PKC β siRNA (h): sc-29450, PKC β siRNA (m): sc-36255, PKC β siRNA (r): sc-108090, PKC β shRNA Plasmid (h): sc-29450-SH, PKC β shRNA Plasmid (m): sc-36255-SH, PKC β shRNA Plasmid (r): sc-108090-SH, PKC β shRNA (h) Lentiviral Particles: sc-29450-V, PKC β shRNA (m) Lentiviral Particles: sc-36255-V and PKC β shRNA (r) Lentiviral Particles: sc-108090-V.

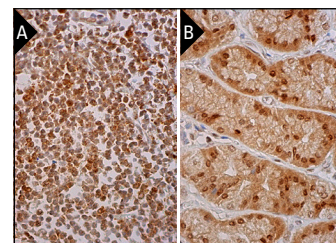
Molecular Weight of PKC β I: 79 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, MEG-01 cell lysate: sc-2283 or A-673 cell lysate: sc-2414.

DATA



PKC β I (E-3): sc-8049. Western blot analysis of PKC β I expression in MOLT-4 (A), MEG-01 (B), A-673 (C), HEL 92.1.7 (D), M1 (E) and WEHI-231 (F) whole cell lysates.



PKC β I (E-3): sc-8049. 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 (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic and nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Cross, T., et al. 2000. PKC δ is an apoptotic lamin kinase. Oncogene 19: 2331-2337.
2. Huang, F., et al. 2021. Reversible phosphorylation of cyclin T1 promotes assembly and stability of P-TEFb. Elife 10: e68473.
3. Zhang, H.L., et al. 2022. PKC β II phosphorylates ACSL4 to amplify lipid peroxidation to induce ferroptosis. Nat. Cell Biol. 24: 88-98.
4. Balaji, V., et al. 2023. Immunohistochemical characterization of bipolar cells in four distantly related avian species. J. Comp. Neurol. 531: 561-581.

RESEARCH USE

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