

PKC ϵ (E-5): sc-1681

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: PRKCE (human) mapping to 2p21; Prkce (mouse) mapping to 17 E4.

SOURCE

PKC ϵ (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 705-737 at the C-terminus of PKC ϵ of human origin (identical to corresponding rat sequence).

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 ϵ (E-5) is available conjugated to agarose (sc-1681 AC), 500 $\mu\text{g}/0.25$ ml agarose in 1 ml, for IP; to HRP (sc-1681 HRP), 200 $\mu\text{g}/\text{ml}$, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-1681 PE), fluorescein (sc-1681 FITC), Alexa Fluor[®] 488 (sc-1681 AF488), Alexa Fluor[®] 546 (sc-1681 AF546), Alexa Fluor[®] 594 (sc-1681 AF594) or Alexa Fluor[®] 647 (sc-1681 AF647), 200 $\mu\text{g}/\text{ml}$, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-1681 AF680) or Alexa Fluor[®] 790 (sc-1681 AF790), 200 $\mu\text{g}/\text{ml}$, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-1681 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 ϵ (E-5) is recommended for detection of PKC ϵ 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).

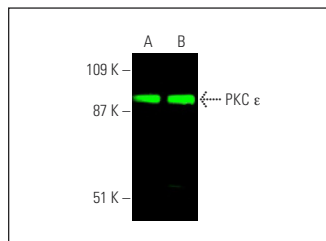
PKC ϵ (E-5) is also recommended for detection of PKC ϵ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PKC ϵ siRNA (h): sc-36251, PKC ϵ siRNA (m): sc-36250, PKC ϵ siRNA (r): sc-270096, PKC ϵ shRNA Plasmid (h): sc-36251-SH, PKC ϵ shRNA Plasmid (m): sc-36250-SH, PKC ϵ shRNA Plasmid (r): sc-270096-SH, PKC ϵ shRNA (h) Lentiviral Particles: sc-36251-V, PKC ϵ shRNA (m) Lentiviral Particles: sc-36250-V and PKC ϵ shRNA (r) Lentiviral Particles: sc-270096-V.

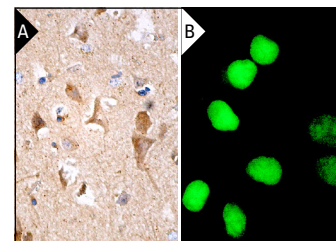
Molecular Weight of PKC ϵ : 90 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or IMR-32 cell lysate: sc-2409.

DATA



PKC ϵ (E-5): sc-1681. Near-infrared western blot analysis of PKC ϵ expression in mouse brain (A) and rat brain (B) tissue extracts. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



PKC ϵ (E-5): sc-1681. Immunoperoxidase staining of formalin fixed, paraffin-embedded human brain tissue showing cytoplasmic staining of neuronal and glial cells (A). Nuclear immunofluorescence staining of methanol-fixed human epithelioid carcinoma cells (B).

SELECT PRODUCT CITATIONS

1. Gaudry, C.A., et al. 1999. Tissue transglutaminase is an important player at the surface of human endothelial cells: evidence for its externalization and its colocalization with the β 1 Integrin. *Exp. Cell Res.* 252: 104-113.
2. Lai, X., et al. 2022. Protein kinase C epsilon promotes de novo lipogenesis and tumor growth in prostate cancer cells by regulating the phosphorylation and nuclear translocation of pyruvate kinase isoform M2. *Exp. Cell Res.* 422: 113427.
3. Pan, R., et al. 2023. PDE4DIP contributes to colorectal cancer growth and chemoresistance through modulation of the NF1/RAS signaling axis. *Cell Death Dis.* 14: 373.

RESEARCH USE

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