SANTA CRUZ BIOTECHNOLOGY, INC.

p-PKC θ (A-4): sc-271920

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 and θ). PKC isoforms can be activated through tyrosine phosphorylation and catalytically activated upon treatment with H_2O_2. The Tyr 155, 525, 523 and 565 residues in the catalytic domain are crucial for activation of these enzymes. The residue Ser 643 appears to be an autophosphorylation site. PKC θ can undergo autophosphorylation on Serine 676 (Ser 676) in the turn loop and Serine 695 (Ser 695) in the hydrophobic loop. Phosphorylation of Serine 676 may negatively regulate activation of NFκB. Ser 695 is crucial to activate the phosphorylation threonine 692 (Thr 692) and Threonine 703 (Thr 703) residues, both of which are necessary for mobility shift.

CHROMOSOMAL LOCATION

Genetic locus: PRKCQ (human) mapping to 10p15.1; Prkcq (mouse) mapping to 2 A1.

SOURCE

p-PKC θ (A-4) is a mouse monoclonal antibody specific for an epitope containing Thr 538 phosphorylated PKC θ of mouse 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.

Blocking peptide available for competition studies, sc-271920 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

p-PKC θ (A-4) is recommended for detection of Thr 538 phosphorylated PKC θ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PKC θ siRNA (h): sc-36252, PKC θ siRNA (m): sc-36247, PKC θ siRNA (r): sc-270095, PKC θ shRNA Plasmid (h): sc-36252-SH, PKC θ shRNA Plasmid (m): sc-36247-SH, PKC θ shRNA Plasmid (r): sc-270095-SH, PKC θ shRNA Lentiviral Particles (h): sc-36252-V, PKC θ shRNA (m) Lentiviral Particles: sc-36247-V and PKC θ shRNA (r) Lentiviral Particles: sc-270095-V.

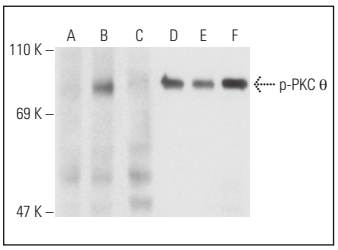
Molecular Weight of p-PKC θ: 82 kDa.

Positive Controls: Jurkat + PMA cell lysate: sc-24718 or Jurkat + anti-CD3 cell lysate: sc-24710.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Western blot analysis of PKC θ phosphorylation in untreated (**A**,**D**), PMA treated (**B**,**E**) and PMA and lambda protein phosphatase treated (**C**,**F**) Jurkat whole cell lysates. Antibodies tested include p-PKC θ (A-4): sc-271920 (**A**,**B**,**C**) and PKC θ (1C2): sc-81534 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Zambrano, J.N., et al. 2018. Staurosporine, an inhibitor of hormonally up-regulated neu-associated kinase. Oncotarget 9: 35962-35973.
2. Shin, J.E., et al. 2022. The administration of Panax ginseng berry extract attenuates high-fat-diet-induced sarcopenic obesity in C57BL/6 mice. Nutrients 14: 1747.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.