SANTA CRUZ BIOTECHNOLOGY, INC.

PKC θ (1C2): sc-81534

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.
3. Kikkawa, U., et al. 1983. Protein kinase C as a possible receptor of tumor-promoting phorbol esters. J. Biol. Chem. 258: 11442-11445.
4. Nishizuka, Y. 1984. The role of protein kinase C in cell surface signal transduction and tumour promotion. Nature 308: 693-698.
5. Nishizuka, Y. 1984. Turnover of inositol phospholipids and signal transduction. Science 225: 1365-1370.
6. Osada, S., et al. 1992. A new member of the protein kinase C family, nPKCq, predominantly expressed in skeletal muscle. Mol. Cell. Biol. 12: 3930-3938.
7. Konishi, H., et al. 1997. Activation of protein kinase C by tyrosine phosphorylation in response to H_2O_2. Proc. Natl. Acad. Sci. USA 94: 11233-11237.

CHROMOSOMAL LOCATION

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

SOURCE

PKC θ (1C2) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to the C-terminal region of PKC θ of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

STORAGE

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

APPLICATIONS

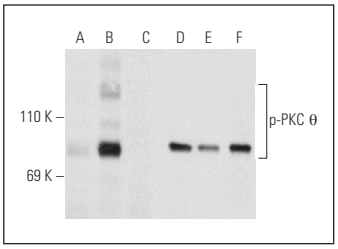
PKC θ (1C2) is recommended for detection of PKC θ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

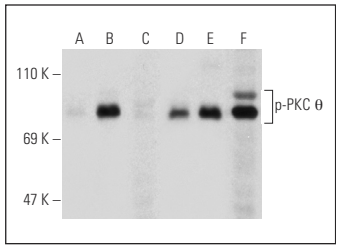
Molecular Weight of PKC θ: 82 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or Jurkat + PMA cell lysate: sc-24718.

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-11): sc-271922 (**A**,**B**,**C**) and PKC θ (1C2): sc-81534 (**D**,**E**,**F**).



Western blot analysis of PKC θ phosphorylation in untreated (**A**,**D**), PMA treated (**B**,**E**) and PMA and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) Jurkat whole cell lysates. Antibodies tested include p-PKC θ (pT538.19): sc-136017 (**A**,**B**,**C**) and PKC θ (1C2): sc-81534 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Win, H.Y., et al. 2009. Role of protein kinase C-ι in transformed non-malignant RWPE-1 cells and androgen-independent prostate carcinoma DU-145 cells. Cell Prolif. 42: 182-194.
2. Kedei, N., et al. 2011. The synthetic bryostatin analog Merle 23 dissects distinct mechanisms of bryostatin activity in the LNCaP human prostate cancer cell line. Biochem. Pharmacol. 81: 1296-1308.
3. Ben-Shmuel, A., et al. 2022. Inhibition of SHP-1 activity by PKC θ regulates NK cell activation threshold and cytotoxicity. Elife 11: e73282.

RESEARCH USE

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