SANTA CRUZ BIOTECHNOLOGY, INC.

p-PKC α (pT638.35): sc-517540

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.

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, nPKC θ, predominantly expressed in skeletal muscle. Mol. Cell. Biol. 12: 3930-3938.

CHROMOSOMAL LOCATION

Genetic locus: PRKCA (human) mapping to 17q24.2.

SOURCE

p-PKC α (pT638.35) is a mouse monoclonal antibody raised against a short amino acid sequence containing Thr 638 phosphorylated PKC α of human 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.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

p-PKC α (pT638.35) is recommended for detection of Thr 638 phosphorylated PKC α of 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)].

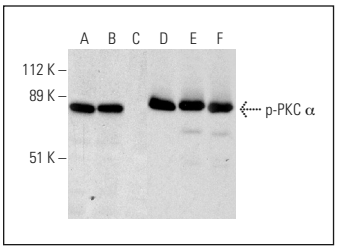
Suitable for use as control antibody for PKC α siRNA (h): sc-36243, PKC α shRNA Plasmid (h): sc-36243-SH and PKC α shRNA (h) Lentiviral Particles: sc-36243-V.

Molecular Weight of p-PKC α: 80 kDa.

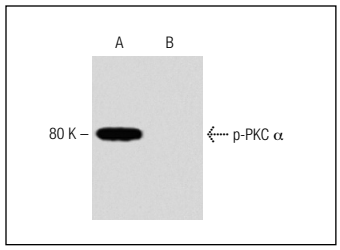
RECOMMENDED SUPPORT REAGENTS

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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of PKC α phosphorylation in untreated (**A**,**D**),Ser/Thr Phosphorylation Induction Cocktail (sc-362324) treated (**B**,**E**) and Ser/Thr Phosphorylation Induction Cocktail (sc-362324) and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) Jurkat whole cell lysates. Antibodies tested include p-PKC α (pT638.35): sc-517540 (**A**,**B**,**C**) and PKC α (H-7): sc-8393 (**D**,**E**,**F**).



p-PKC α (pT638.35): sc-517540. Western blot analysis of PKC α phosphorylation in Calyculin A and Okadaic Acid-treated Jurkat whole cell lysates either untreated (**A**) or treated (**B**) with lambda phosphatase.

SELECT PRODUCT CITATIONS

1. Yahagi, S., et al. 2011. Lysophospholipids improve skin moisturization by modulating of calcium-dependent cell differentiation pathway. Int. J. Cosmet. Sci. 33: 251-256.
2. Tang, W.H., et al. 2011. Glucose and collagen regulate human platelet activity through aldose reductase induction of thromboxane. J. Clin. Invest. 121: 4462-4476.
3. Xie, L., et al. 2012. Pyridoxine inhibits endothelial NOS uncoupling induced by oxidized low-density lipoprotein via the PKCα signalling pathway in human umbilical vein endothelial cells. Br. J. Pharmacol. 165: 754-764.

RESEARCH USE

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