

p-PKC δ (Ser 643): sc-18370

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). 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.

CHROMOSOMAL LOCATION

Genetic locus: Prkcd (mouse) mapping to 14 B.

SOURCE

p-PKC δ (Ser 643) is available as either goat (sc-18370) or rabbit (sc-18370-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 643 phosphorylated PKC δ of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18370 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

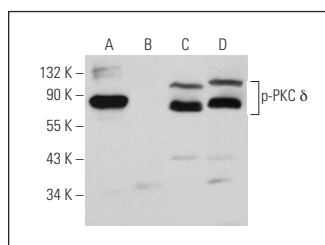
p-PKC δ (Ser 643) is recommended for detection of Ser 643 phosphorylated PKC δ of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PKC δ siRNA (m): sc-36246, PKC δ shRNA Plasmid (m): sc-36246-SH and PKC δ shRNA (m) Lentiviral Particles: sc-36246-V.

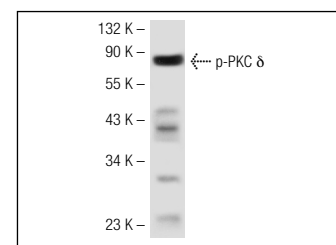
Molecular Weight of p-PKC δ : 78 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, NIH/3T3 whole cell lysate: sc-2210 or RAW 264.7 + LPS/PMA cell lysate: sc-2212.

DATA



Western blot analysis of PKC δ phosphorylation in untreated (A, C) and lambda protein phosphatase (sc-200312A) treated (B, D) RAW 264.7 whole cell lysates. Antibodies tested include p-PKC δ (Ser 643)-R: sc-18370-R (A, B) and PKC δ (C-20): sc-937 (C, D).



p-PKC δ (Ser 643)-R: sc-18370-R. Western blot analysis of PKC δ phosphorylation in NIH/3T3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Brizuela, L., et al. 2006. Sphingosine 1-phosphate: a novel stimulator of aldosterone secretion. *J. Lipid Res.* 47: 1238-1249.
2. Shimohata, T., et al. 2007. Suppression of δ PKC activation after focal cerebral ischemia contributes to the protective effect of hypothermia. *J. Cereb. Blood Flow Metab.* 27: 1463-1475.
3. Brizuela, L., et al. 2007. Sphingosine-1-phosphate stimulates aldosterone secretion through a mechanism involving the PI3K/PKB and MEK/ERK 1/2 pathways. *J. Lipid Res.* 48: 2264-2274.
4. Zhiyong, Z., et al. 2008. Demonstration of the essential role of protein kinase C isoforms in hyperglycemia-induced embryonic malformations. *Reprod. Sci.* 15: 349-356.
5. Cataldi, A., et al. 2009. Effect of hypoxia and aging on PKC δ -mediated SC-35 phosphorylation in rat myocardial tissue. *Anat. Rec.* 292: 1135-1142.

RESEARCH USE

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