

# PKC $\epsilon$ (17): sc-56944

## 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 ( $\alpha$ ,  $\beta$ I,  $\beta$ II and  $\gamma$ ) and novel (n) PKC isoforms ( $\delta$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$ ,  $\theta$ ,  $\lambda$ / $\iota$ ,  $\mu$  and  $\nu$ ). 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  $\delta$  and  $\epsilon$  are independent of  $\text{Ca}^{2+}$ . 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

PKC  $\epsilon$  (17) is a mouse monoclonal antibody raised against the C-terminus of PKC  $\epsilon$  of human origin.

## PRODUCT

Each vial contains 1 ml culture supernatant containing IgG<sub>2a</sub> with < 0.1% sodium azide.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## RESEARCH USE

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

## APPLICATIONS

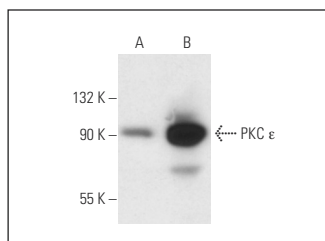
PKC  $\epsilon$  (17) is recommended for detection of PKC  $\epsilon$  of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20  $\mu$ l per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200).

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

Molecular Weight of PKC  $\epsilon$ : 90 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, mouse brain extract: sc-2253 or rat heart extract: sc-2393.

## DATA



PKC  $\epsilon$  (17): sc-56944. Western blot analysis of PKC  $\epsilon$  expression in IMR-32 whole cell lysate (A) and mouse brain tissue extract (B).

## SELECT PRODUCT CITATIONS

1. Lu, G., et al. 2010. Chronic morphine treatment impaired hippocampal long-term potentiation and spatial memory via accumulation of extracellular adenosine acting on Adenosine A1 receptors. *J. Neurosci.* 30: 5058-5070.
2. Gonzalez-Arenas, A., et al. 2015. PKC $\alpha$  and PKC $\delta$  activation regulates transcriptional activity and degradation of progesterone receptor in human astrocytoma cells. *Endocrinology* 156: 1010-1022.
3. Perry, R.J., et al. 2017. Mechanisms by which a very-low-calorie diet reverses hyperglycemia in a rat model of type 2 diabetes. *Cell Metab.* 27: 210-217.
4. Arias-González, I., et al. 2018. Cytotoxic effect of *Kalanchoe flammula* and induction of intrinsic mitochondrial apoptotic signaling in prostate cancer cells. *J. Ethnopharmacol.* 222: 133-147.



See **PKC  $\epsilon$  (E-5): sc-1681** for PKC  $\epsilon$  antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.