

# p-PKC $\beta$ I (Thr 641): sc-101776

## 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 ( $\delta$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$  and  $\theta$ ). 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 nPKC  $\delta$  and  $\epsilon$  are independent of  $Ca^{2+}$ . On the other hand, nPKC  $\delta$  and  $\epsilon$ , as well as all of the cPKC 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.

## CHROMOSOMAL LOCATION

Genetic locus: PRKCB (human) mapping to 16p12.2; Prkcb (mouse) mapping to 7 F3.

## SOURCE

p-PKC  $\beta$ I (Thr 641) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 641 phosphorylated PKC  $\beta$ I of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-PKC  $\beta$ I (Thr 641) is recommended for detection of Thr 641 phosphorylated PKC  $\beta$ I of human, rat and bovine origin (also designated as Thr 642), and correspondingly phosphorylated PKC  $\beta$ I of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PKC  $\beta$  siRNA (h): sc-29450, PKC  $\beta$  siRNA (m): sc-36255, PKC  $\beta$  shRNA Plasmid (h): sc-29450-SH, PKC  $\beta$  shRNA Plasmid (m): sc-36255-SH, PKC  $\beta$  shRNA (h) Lentiviral Particles: sc-29450-V and PKC  $\beta$  shRNA (m) Lentiviral Particles: sc-36255-V.

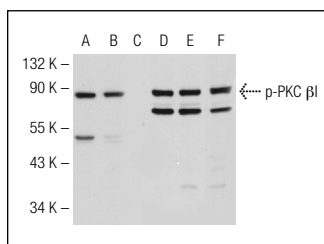
Molecular Weight of p-PKC  $\beta$ I: 79 kDa.

Positive Controls: K-562 + PMA cell lysate: sc-2280 or K-562 whole cell lysate: sc-2203.

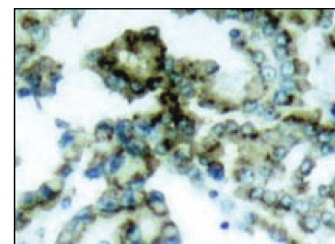
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz<sup>™</sup>: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



Western blot analysis of PKC  $\beta$ I phosphorylation in untreated (A, D), PMA treated (B, E) and lambda protein phosphatase treated (C, F) K-562 whole cell lysates. Antibodies tested include p-PKC  $\beta$ I (Thr 641): sc-101776 (A, B, C) and PKC  $\beta$ I (E-3): sc-8049 (D, E, F).



p-PKC  $\beta$ I (Thr 641): sc-101776. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung carcinoma tissue showing cytoplasmic staining.

## SELECT PRODUCT CITATIONS

1. Taniuchi, K., et al. 2012. BART inhibits pancreatic cancer cell invasion by PKC $\alpha$  inactivation through binding to ANX7. *PLoS ONE* 7: e35674.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.