

# PLC $\beta$ 4 (L-15): sc-31765

## BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a critical role in the initiation of receptor mediated signal transduction through the generation of the two second messengers, inositol 1, 4, 5-triphosphate and diacylglycerol from phosphatidylinositol 4, 5 bisphosphate. A total of eight mammalian PLC isozymes have been described (PLC  $\beta$ 1, PLC  $\beta$ 2, PLC  $\beta$ 3, PLC  $\beta$ 4, PLC  $\gamma$ 1, PLC  $\gamma$ 2, PLC  $\delta$ 1 and PLC  $\delta$ 2). The  $\gamma$ -type enzymes are unique in that they contain SH2 and SH3 domains. Moreover, the two  $\gamma$ -type enzymes, but not the  $\beta$  and  $\delta$  isozymes, are subject to activation by a number of protein tyrosine kinases which associate with their SH2 domains and induce their activation by phosphorylation. In contrast, activation of PLC  $\beta$ 1, PLC  $\beta$ 2 and PLC  $\beta$ 3 is mediated by the  $\alpha$  subunits of the  $G_q$  class of heterotrimeric G proteins and by certain  $\beta\gamma$  G protein subunits. The regulatory mechanisms for PLC  $\delta$ 1 and PLC  $\delta$ 2 are not yet resolved.

## REFERENCES

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2. Emori, Y., et al. 1989. A second type of rat phosphoinositide-specific phospholipase C containing a Src-related sequence not essential for phosphoinositide-hydrolyzing activity. J. Biol. Chem. 264: 21885-21890.
3. Meldrum, E., et al. 1991. A second gene product of the inositol-phospholipid-specific phospholipase C $\delta$  subclass. Eur. J. Biochem. 196: 159-165.
4. Rhee, S.G. and Choi, K.D. 1992. Regulation of inositol phospholipid-specific phospholipase C isozymes. J. Biol. Chem. 267: 12393-12396.
5. Kim, M.J., et al. 1993. Cloning of cDNA encoding rat phospholipase C- $\beta$ 4, a new member of the phospholipase C. Biochem. Biophys. Res. Commun. 194: 706-712.
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## CHROMOSOMAL LOCATION

Genetic locus: PLCB4 (human) mapping to 20p12.3; Plcb4 (mouse) mapping to 2 F3.

## SOURCE

PLC  $\beta$ 4 (L-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PLC  $\beta$ 4 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-31764 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

PLC  $\beta$ 4 (L-15) is recommended for detection of PLC  $\beta$ 4 of mouse, rat and human 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).

PLC  $\beta$ 4 (L-15) is also recommended for detection of PLC  $\beta$ 4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PLC  $\beta$ 4 siRNA (h): sc-36274, PLC  $\beta$ 4 siRNA (m): sc-36275, PLC  $\beta$ 4 shRNA Plasmid (h): sc-36274-SH, PLC  $\beta$ 4 shRNA Plasmid (m): sc-36275-SH, PLC  $\beta$ 4 shRNA (h) Lentiviral Particles: sc-36274-V and PLC  $\beta$ 4 shRNA (m) Lentiviral Particles: sc-36275-V.

Molecular Weight of PLC  $\beta$ 4: 145 kDa.

Positive Controls: rat cerebellum extract: sc-2398, ES-2 cell lysate: sc-24674 or mouse cerebellum extract: sc-2403.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>TM</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>TM</sup> Mounting Medium: sc-24941.

## 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.



Try **PLC  $\beta$ 4 (A-8): sc-166131** or **PLC  $\beta$ 4 (E-1): sc-166132**, our highly recommended monoclonal alternatives to PLC  $\beta$ 4 (L-15).