

# PLC $\beta$ 4 (E-1): sc-166132

## 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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3. Meldrum, E., et al. 1991. A second gene product of the inositol-phospholipid-specific phospholipase Cd subclass. *Eur. J. Biochem.* 196: 159-165.
4. Koch, C.A., et al. 1991. SH2 and SH3 domains: elements that control interactions of cytoplasmic signaling proteins. *Science* 252: 668-674.
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6. 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 (E-1) is a mouse monoclonal antibody raised against amino acids 876-1115 of PLC  $\beta$ 4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PLC  $\beta$ 4 (E-1) is recommended for detection of PLC  $\beta$ 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

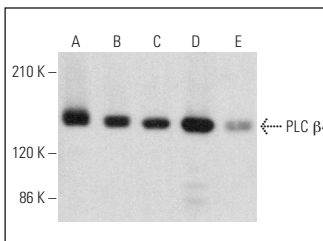
Molecular Weight of PLC  $\beta$ 4: 145 kDa.

Positive Controls: mouse cerebellum extract: sc-2403, rat cerebellum extract: sc-2398 or AMJ2-C8 whole cell lysate: sc-364366.

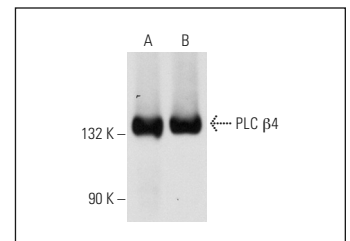
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



PLC  $\beta$ 4 (E-1): sc-166132. Western blot analysis of PLC  $\beta$ 4 expression in WI-38 (A), IMR-32 (B), Neuro-2A (C), AMJ2-C8 (D) and C6 (E) whole cell lysates.



PLC  $\beta$ 4 (E-1): sc-166132. Western blot analysis of PLC  $\beta$ 4 expression in mouse cerebellum (A) and rat cerebellum (B) tissue extracts.

## 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) for detailed protocols and support products.