

# PLC $\beta$ 3 (D-7): sc-133231



The Power to Question

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: PLCB3 (human) mapping to 11q13.1; Plcb3 (mouse) mapping to 19 A.

## SOURCE

PLC  $\beta$ 3 (D-7) is a mouse monoclonal antibody raised against amino acids 1151-1234 of PLC  $\beta$ 3 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.

PLC  $\beta$ 3 (D-7) is available conjugated to agarose (sc-133231 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133231 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133231 PE), fluorescein (sc-133231 FITC), Alexa Fluor<sup>®</sup> 488 (sc-133231 AF488), Alexa Fluor<sup>®</sup> 546 (sc-133231 AF546), Alexa Fluor<sup>®</sup> 594 (sc-133231 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-133231 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-133231 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-133231 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

PLC  $\beta$ 3 (D-7) is recommended for detection of PLC  $\beta$ 3 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

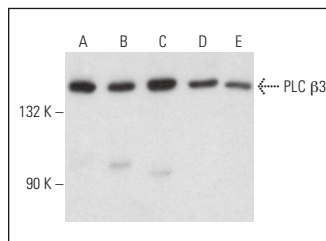
Suitable for use as control antibody for PLC  $\beta$ 3 siRNA (h): sc-36272, PLC  $\beta$ 3 siRNA (m): sc-36273, PLC  $\beta$ 3 siRNA (r): sc-156124, PLC  $\beta$ 3 shRNA Plasmid (h): sc-36272-SH, PLC  $\beta$ 3 shRNA Plasmid (m): sc-36273-SH, PLC  $\beta$ 3 shRNA Plasmid (r): sc-156124-SH, PLC  $\beta$ 3 shRNA (h) Lentiviral Particles: sc-36272-V, PLC  $\beta$ 3 shRNA (m) Lentiviral Particles: sc-36273-V and PLC  $\beta$ 3 shRNA (r) Lentiviral Particles: sc-156124-V.

Molecular Weight of PLC  $\beta$ 3: 152 kDa.

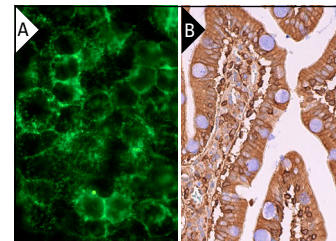
## STORAGE

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

## DATA



PLC  $\beta$ 3 (D-7): sc-133231. Western blot analysis of PLC  $\beta$ 3 expression in SK-BR-3 (A), MCF7 (B), F9 (C), BC<sub>3</sub>H1 (D) and A-10 (E) whole cell lysates.



PLC  $\beta$ 3 (D-7): sc-133231. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic and membrane staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

- Sheng, H., et al. 2012. Corticotropin-releasing hormone stimulates mitotic kinesin-like protein 1 expression via a PLC/PKC-dependent signaling pathway in hippocampal neurons. *Mol. Cell. Endocrinol.* 362: 157-164.
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- Zhong, W., et al. 2022. An acquired phosphatidylinositol 4-phosphate transport initiates T-cell deterioration and leukemogenesis. *Nat. Commun.* 13: 4390.
- Róg, J., et al. 2023. Primary mouse myoblast metabotropic purinoceptor profiles and calcium signalling differ with their muscle origin and are altered in mdx dystrophinopathy. *Sci. Rep.* 13: 9333.

## RESEARCH USE

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

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