SANTA CRUZ BIOTECHNOLOGY, INC.

PLC β3 (H-3): sc-133140

SANTA CRUZ BIOTECHNOLOGY

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 β1, PLC β2, PLC β3, PLC β4, PLC γ1, PLC γ2, PLC δ1 and PLC δ2). The γ-type enzymes are unique in that they contain SH2 and SH3 domains. Moreover, the two γ-type enzymes, but not the β and δ isozymes, are subject to activation by a number of protein tyrosine kinases which associate with their SH2 domains and induce their activation by phosphoryation. In contrast, activation of PLC β1, PLC β2 and PLC β3 is mediated by the α subunits of the G_q class of heterotrimeric G proteins and by certain βγ G protein subunits. The regulatory mechanisms for PLC δ1 and PLC δ2 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. Koch, C.A., et al. 1991. SH2 and SH3 domains: elements that control interactions of cytoplasmic signaling proteins. Science 252: 668-674.
4. Meldrum, E., et al. 1991. A second gene product of the inositol-phospholipid-specific phospholipase Cδ subclass. Eur. J. Biochem. 196: 159-165.
5. Rhee, S.G. and Choi, K.D. 1992. Regulation of inositol phospholipid-specific phospholipase C isozymes. J. Biol. Chem. 267: 12393-12396.
6. Kim, M.J., et al. 1993. Cloning of cDNA encoding rat phospholipase C-β4, a new member of the phospholipase C. Biochem. Biophys. Res. Commun. 194: 706-712.
7. Jhon, D., et al. 1993. Cloning, sequencing, purification and G_q-dependent activation of phospholipase C-β3. J. Biol. Chem. 268: 6654-6661

CHROMOSOMAL LOCATION

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

SOURCE

PLC β3 (H-3) is a mouse monoclonal antibody raised against amino acids 1151-1234 of PLC β3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

PLC β3 (H-3) is recommended for detection of PLC β3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 β3 siRNA (h): sc-36272, PLC β3 siRNA (m): sc-36273, PLC β3 siRNA (r): sc-156124, PLC β3 shRNA Plasmid (h): sc-36272-SH, PLC β3 shRNA Plasmid (m): sc-36273-SH, PLC β3 shRNA Plasmid (r): sc-156124-SH, PLC β3 shRNA (h) Lentiviral Particles: sc-36272-V, PLC β3 shRNA (m) Lentiviral Particles: sc-36273-V and LC β3 shRNA (r) Lentiviral Particles: sc-156124-V.

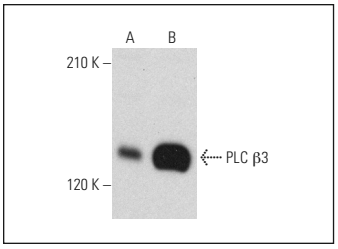
Molecular Weight of PLC β3: 152 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MCF7 whole cell lysate: sc-2206 or SK-BR-3 cell lysate: sc-2218.

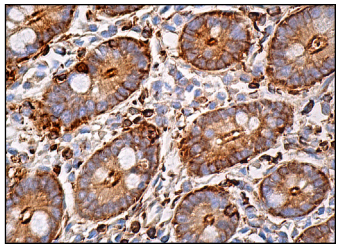
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PLC β3 (H-3): sc-133140. Western blot analysis of PLC β3 expression in SK-BR-3 (**A**) and MCF7 (**B**) whole cell lysates.



PLC β3 (H-3): sc-133140. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Fais, P., et al. 2018. Phosphoinositide-specific phospholipase C in normal human liver and in alcohol abuse. J. Cell. Biochem. E-published.

RESEARCH USE

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