

PLC β 3 (H-1): sc-271372

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 β 1, PLC β 2, PLC β 3, PLC β 4, PLC γ 1, PLC γ 2, PLC δ 1 and PLC δ 2). 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 phosphorylation. In contrast, activation of PLC β 1, PLC β 2 and PLC β 3 is mediated by the α subunits of the G_q class of heterotrimeric G proteins and by certain $\beta\gamma$ G protein subunits. The regulatory mechanisms for PLC δ 1 and PLC δ 2 are not yet resolved.

REFERENCES

1. Suh, P., et al. 1988. Inositol phospholipid-specific phospholipase C: complete cDNA and protein sequences and sequence homology to tyrosine kinase-related oncogene products. *Proc. Natl. Acad. Sci. USA* 85: 5419-5423.
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 C δ 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- β 4, 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- β 3. *J. Biol. Chem.* 268: 6654-6661.

CHROMOSOMAL LOCATION

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

SOURCE

PLC β 3 (H-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 11-42 at the N-terminus of PLC β 3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271372 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PLC β 3 (H-1) is recommended for detection of PLC β 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

PLC β 3 (H-1) is also recommended for detection of PLC β 3 in additional species, including canine, bovine and porcine.

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

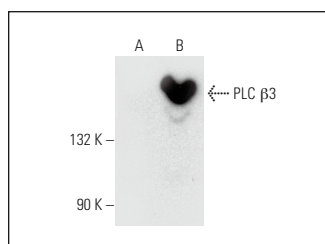
Molecular Weight of PLC β 3: 152 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218, PLC β 3 (m): 293T Lysate: sc-122623 or A-431 whole cell lysate: sc-2201.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM 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 κ BP-FITC: sc-516140 or m-IgG κ 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 β 3 (H-1): sc-271372. Western blot analysis of PLC β 3 expression in non-transfected: sc-117752 (A) and mouse PLC β 3 transfected: sc-122623 (B) 293T whole cell lysates.

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.