

PLC β 1 (K-20): sc-31756

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. There are many mammalian PLC isozymes, including 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 and PLC ϵ . PLC β 1, one of the PLC β isozymes, exists as two immunologically distinguishable proteins (PLC β 1a) and (PLC β 1b). The two isoforms encode in two distinct transcripts and are generated by alternative splicing of a single gene. PLC β 1a is preferentially expressed in the cytosol, whereas PLC β 1b is predominantly localized in the nuclei. PLC β 1 is a G protein-dependent phosphodiesterase that hydrolyses phosphatidylinositol 4,5 bisphosphate into inositol 1,4,5-triphosphate and diacylglycerol after the stimulation of a variety of neurotransmitter receptors at the cell surface. The C-terminal region of PLC β 1 has G_q GAP activity and has ability to interact with G_q and other PLC β 1 molecules.

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. Meldrum, E., et al. 1991. A second gene product of the inositol-phospholipid-specific phospholipase C δ subclass. *Eur. J. Biochem.* 196: 159-165.
4. Rhee, S.G., et al. 1992. Regulation of inositol phospholipid-specific phospholipase C isozymes. *J. Biol. Chem.* 267: 12393-12396.
5. 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: PLCB1 (human) mapping to 20p12.3; Plcb1 (mouse) mapping to 2 F3.

SOURCE

PLC β 1 (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PLC β 1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-31756 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

PLC β 1 (K-20) is recommended for detection of PLC β 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 1 (K-20) is also recommended for detection of PLC β 1 in additional species, including equine.

Suitable for use as control antibody for PLC β 1 siRNA (h): sc-36266, PLC β 1 siRNA (m): sc-36267, PLC β 1 shRNA Plasmid (h): sc-36266-SH, PLC β 1 shRNA Plasmid (m): sc-36267-SH, PLC β 1 shRNA (h) Lentiviral Particles: sc-36266-V and PLC β 1 shRNA (m) Lentiviral Particles: sc-36267-V.

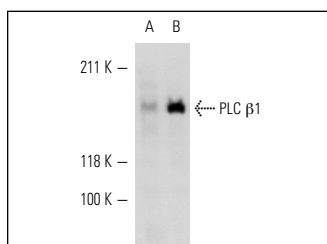
Molecular Weight of PLC β 1: 150 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, KNRK whole cell lysate: sc-2214 or A-431 whole cell lysate: sc-2201.

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™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 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™ Mounting Medium: sc-24941.

DATA



PLC β 1 (K-20): sc-31756. Western blot analysis of PLC β 1 expression in NIH/3T3 (A) and KNRK (B) whole cell lysates.

RESEARCH USE

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

MONOS
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Try **PLC β 1 (D-8): sc-5291** or **PLC β 1 (16): sc-136040**, our highly recommended monoclonal alternatives to PLC β 1 (K-20).