

PLC δ 3 (H-14): sc-30825

BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a crucial role in the initiation of receptor-mediated signal transduction through the generation of the two second messengers, inositol 1,4,5-triphosphate (IP3) and diacylglycerol (DAG) from phosphatidylinositol 4,5-bisphosphate. There are several mammalian PLC proteins, including PLC β 1, PLC β 2, PLC β 3, PLC β 4, PLC γ 1, PLC γ 2, PLC δ 1, PLC δ 3, PLC δ 4 and PLC ϵ . PLC δ 1, a calcium signal amplifier, is activated by an atypical GTP-binding protein and functions as an effector for GTP-binding protein transglutaminase II-mediated oxytocin receptor and α 1B-adrenoreceptor signaling. PLC δ 1 is highly expressed in brain, heart, lung and testis and is abnormally accumulated in autopsied brains with Alzheimer's disease (AD), suggesting that it may play a role in the pathology of AD. Both PLC δ 3 and PLC δ 4 contain several functional domains through which they bind calcium as a cofactor and catalyze the creation of DAG and IP3, playing an essential role in signal transduction. PLC δ 4 is highly expressed in skeletal muscle and kidney tissue, as well as in corneal epithelial cells, suggesting a role in the regulation of kidney and ocular function.

REFERENCES

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2. Pawelczyk, T., et al. 1997. Expression, purification and kinetic properties of human recombinant Phospholipase C δ 3. *Acta Biochim. Pol.* 44: 221-229.
3. Kim, H., et al. 1999. Assignment of the human PLC δ 3 gene (PLCD3) to human chromosome band 17q21 by fluorescence *in situ* hybridization. *Cytogenet. Cell Genet.* 87: 209-210.
4. Pawelczyk, T., et al. 1999. Phospholipase C- δ 3 binds with high specificity to phosphatidylinositol 4,5-bisphosphate and phosphatidic acid in bilayer membranes. *Eur. J. Biochem.* 262: 291-298.
5. Lin, F.G., et al. 2001. Downregulation of Phospholipase C- δ 3 by cAMP and calcium. *Biochem. Biophys. Res. Commun.* 286: 274-280.
6. Ananthanarayanan, B., et al. 2002. Membrane targeting of C2 domains of Phospholipase C- δ isoforms. *J. Biol. Chem.* 277: 3568-3575.

CHROMOSOMAL LOCATION

Genetic locus: PLCD3 (human) mapping to 17q21.31; Plcd3 (mouse) mapping to 11 E1.

SOURCE

PLC δ 3 (H-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PLC δ 3 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-30825 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PLC δ 3 (H-14) is recommended for detection of PLC δ 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PLC δ 3 (H-14) is also recommended for detection of PLC δ 3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PLC δ siRNA (h): sc-40843, PLC δ 3 siRNA (m): sc-155939, PLC δ shRNA Plasmid (h): sc-40843-SH, PLC δ 3 shRNA Plasmid (m): sc-155939-SH, PLC δ shRNA (h) Lentiviral Particles: sc-40843-V and PLC δ 3 shRNA (m) Lentiviral Particles: sc-155939-V.

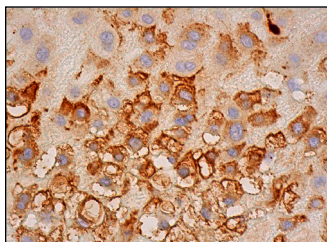
Molecular Weight of PLC δ 3: 85-90 kDa.

Positive Controls: F9 cell lysate: sc-2245 or NIH/3T3 whole cell lysate: sc-2210.

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) 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



PLC δ 3 (H-14): sc-30825. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing membrane and cytoplasmic staining of decidual cells.

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.