

PLC δ 3 (E-5): sc-514912

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

1. Ghosh, S., et al. 1997. Phospholipase C isoforms δ 1 and δ 3 from human fibroblasts. High-yield expression in *Escherichia coli*, simple purification, and properties. *Protein Expr. Purif.* 9: 262-278.
2. Pawelczyk, T., et al. 1997. Expression, purification and kinetic properties of human recombinant phospholipase C δ 3. *Acta Biochim. Pol.* 44: 221-229.

CHROMOSOMAL LOCATION

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

SOURCE

PLC δ 3 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 517-535 within an internal region of PLC δ 3 of human origin.

PRODUCT

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

PLC δ 3 (E-5) is available conjugated to agarose (sc-514912 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514912 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514912 PE), fluorescein (sc-514912 FITC), Alexa Fluor[®] 488 (sc-514912 AF488), Alexa Fluor[®] 546 (sc-514912 AF546), Alexa Fluor[®] 594 (sc-514912 AF594) or Alexa Fluor[®] 647 (sc-514912 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-514912 AF680) or Alexa Fluor[®] 790 (sc-514912 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514912 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

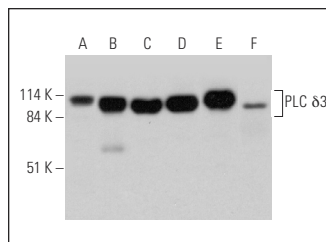
PLC δ 3 (E-5) is recommended for detection of PLC δ 3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

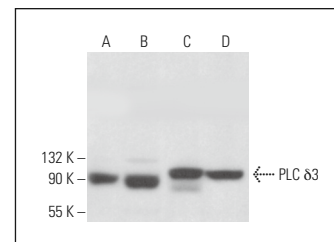
Molecular Weight of PLC δ 3: 85-90 kDa.

Positive Controls: RT-4 whole cell lysate: sc-364257, human testis extract: sc-363781 or F9 cell lysate: sc-2245.

DATA



PLC δ 3 (E-15): sc-514912. Western blot analysis of PLC δ 3 expression in F9 (A), HCT-116 (B), RT-4 (C), U-251-MG (D) and HT-29 (E) whole cell lysates and human testis tissue extract (F).



PLC δ 3 (E-5): sc-514912. Western blot analysis of PLC δ 3 expression in WiDr (A), JAR (B), C6 (C) and A-10 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fais, P., et al. 2019. Phosphoinositide-specific phospholipase C in normal human liver and in alcohol abuse. *J. Cell. Biochem.* 120: 7907-7917.
2. Okada, M., et al. 2022. Inhibition of the phospholipase C ϵ -c-Jun N-terminal kinase axis suppresses glioma stem cell properties. *Int. J. Mol. Sci.* 23: 8785.
3. Rah, S.Y., et al. 2023. CD38/ADP-ribose/TRPM2-mediated nuclear Ca²⁺ signaling is essential for hepatic gluconeogenesis in fasting and diabetes. *Exp. Mol. Med.* 55: 1492-1505.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.