

PLC δ 1 (D-7): sc-393464

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

- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: PLCD1 (human) mapping to 3p22.2; Plcd1 (mouse) mapping to 9 F3.

SOURCE

PLC δ 1 (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 71-92 near the N-terminus of PLC δ 1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PLC δ 1 (D-7) is available conjugated to agarose (sc-393464 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393464 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393464 PE), fluorescein (sc-393464 FITC), Alexa Fluor[®] 488 (sc-393464 AF488), Alexa Fluor[®] 546 (sc-393464 AF546), Alexa Fluor[®] 594 (sc-393464 AF594) or Alexa Fluor[®] 647 (sc-393464 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393464 AF680) or Alexa Fluor[®] 790 (sc-393464 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393464 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

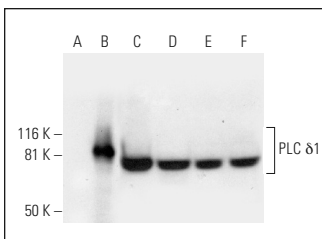
PLC δ 1 (D-7) is recommended for detection of PLC δ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 1 siRNA (h): sc-40841, PLC δ 1 siRNA (m): sc-40842, PLC δ 1 shRNA Plasmid (h): sc-40841-SH, PLC δ 1 shRNA Plasmid (m): sc-40842-SH, PLC δ 1 shRNA (h) Lentiviral Particles: sc-40841-V and PLC δ 1 shRNA (m) Lentiviral Particles: sc-40842-V.

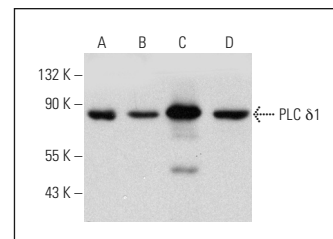
Molecular Weight of PLC δ 1: 85 kDa.

Positive Controls: PLC δ 1 (m): 293T Lysate: sc-122626, F9 cell lysate: sc-2245 or Hep G2 cell lysate: sc-2227.

DATA



PLC δ 1 (D-7): sc-393464. Western blot analysis of PLC δ 1 expression in non-transfected 293T: sc-117752 (A), mouse PLC δ 1 transfected 293T: sc-122626 (B), F9 (C), Hep G2 (D), Jurkat (E) and MCF7 (F) whole cell lysates.



PLC δ 1 (D-7): sc-393464. Western blot analysis of PLC δ 1 expression in NIH/3T3 (A), BC₃H1 (B), KN9K (C) and A-10 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Fais, P., et al. 2018. Phosphoinositide-specific phospholipase C in normal human liver and in alcohol abuse. *J. Cell. Biochem.* E-published.
- Asano, S., et al. 2019. Phospholipase C-related catalytically inactive protein regulates cytokinesis by protecting phosphatidylinositol 4,5-bisphosphate from metabolism in the cleavage furrow. *Sci. Rep.* 9: 12729.
- Kumar, S.P. and Babu, P.P. 2020. Aberrant dopamine receptor signaling plays critical role in the impairment of striatal neurons in experimental cerebral malaria. *Mol. Neurobiol.* E-published.

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.