SANTA CRUZ BIOTECHNOLOGY, INC.

PC-PLD2 (B-3): sc-515744

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Virtually every cell uses phosphatidylcholine as a substrate to produce phosphatidic acid and choline. Phosphatidylcholine phospholipase D1 and D2 (PC-PLD1 and PC-PLD2) are phospholipid-specific phosphodiesterases that hydrolyze phosphatidylcholine. Unlike PC-PLD1, which associates with secretory granules, PC-PLD2 localizes to the plasma membrane, where it is implicated in the formation of endocytotic vesicles. Both PC-PLD1 and PC-PLD2 coordinately regulate macrophage phagocytosis. PC-PLD activity in mammalian cells is transiently stimulated upon activation by G protein-coupled and receptor tyrosine kinase cell surface receptors. For example, PC-PLD1 and PC-PLD2 participate in sphingosine 1-phosphate stimulation of ERK phosphorylation and IL-8 secretion in bronchial epithelial cells. In addition, tubulin binding to PC-PLD2 inhibits muscarinic receptor-linked PC-PLD2 activation. PC-PLD2 also enhances PKCζ activity through direct interaction in a lipase activity-independent manner. PC-PLD1 and PC-PLD2 stimulate cell growth by repressing expression of p21 gene through p53-dependent and p53-independent pathways, respectively, which may ultimately lead to carcinogenesis.

REFERENCES

1. Nishida, A., et al. 1994. Brain ischemia decreases phosphatidylcholine-phospholipase D but not phosphatidylinositol phospholipase C in rats. Stroke 25: 1247-1251.
2. del Peso, L., et al. 1996. Activation of phospholipase D by ras proteins is independent of protein kinase C. J. Cell. Biochem. 61: 599-608.

CHROMOSOMAL LOCATION

Genetic locus: PLD2 (human) mapping to 17p13.2; Pld2 (mouse) mapping to 11 B3.

SOURCE

PC-PLD2 (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 820-846 within the catalytic domain of PC-PLD2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PC-PLD2 (B-3) is available conjugated to agarose (sc-515744 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515744 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515744 PE), fluorescein (sc-515744 FITC), Alexa Fluor® 488 (sc-515744 AF488), Alexa Fluor® 546 (sc-515744 AF546), Alexa Fluor® 594 (sc-515744 AF594) or Alexa Fluor® 647 (sc-515744 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515744 AF680) or Alexa Fluor® 790 (sc-515744 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

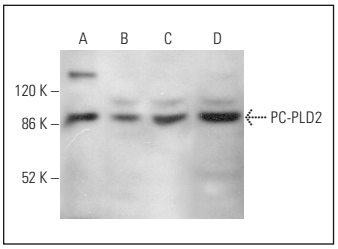
PC-PLD2 (B-3) is recommended for detection of isoforms PC-PLD2A and PC-PLD2B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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).

Suitable for use as control antibody for PC-PLD2 siRNA (h): sc-44001, PC-PLD2 siRNA (m): sc-61367, PC-PLD2 siRNA (r): sc-270132, PC-PLD2 shRNA Plasmid (h): sc-44001-SH, PC-PLD2 shRNA Plasmid (m): sc-61367-SH, PC-PLD2 shRNA Plasmid (r): sc-270132-SH, PC-PLD2 shRNA (h) Lentiviral Particles: sc-44001-V, PC-PLD2 shRNA (m) Lentiviral Particles: sc-61367-V and PC-PLD2 shRNA (r) Lentiviral Particles: sc-270132-V.

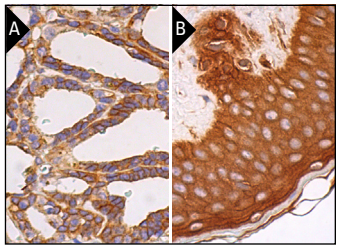
Molecular Weight of PC-PLD2: 117 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, J774.A1 cell lysate: sc-3802 or WEHI-231 whole cell lysate: sc-2213.

DATA



PC-PLD2 (B-3): sc-515744. Western blot analysis of PC-PLD2 expression in Jurkat (**A**), BT-20 (**B**), WEHI-231 (**C**) and J774.A1 (**D**) whole cell lysates.



PC-PLD2 (B-3): sc-515744. Immunoperoxidase staining of formalin fixed, paraffin-embedded human seminal vesicle tissue showing membrane and cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining keratinocytes, Langerhans cells and melanocytes and membrane and cytoplasmic staining of fibroblasts (**B**).

SELECT PRODUCT CITATIONS

1. Hwang, W.C., et al. 2020. Inhibition of phospholipase D2 augments histone deacetylase inhibitor-induced cell death in breast cancer cells. Biol. Res. 53: 34.
2. Zhao, Z., et al. 2021. Lipid metabolism is a novel and practical source of potential targets for antiviral discovery against porcine parvovirus. Vet. Microbiol. 261: 109177.

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.