SANTA CRUZ BIOTECHNOLOGY, INC.

PC-PLD1 (H-160): sc-25512

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 hy-drolyze 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.

CHROMOSOMAL LOCATION

Genetic locus: PLD1 (human) mapping to 3q26.31; Pld1 (mouse) mapping to 3 A3.

SOURCE

PC-PLD1 (H-160) is a rabbit polyclonal antibody raised against amino acids 1-160 of PC-PLD1 of human origin.

PRODUCT

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

APPLICATIONS

PC-PLD1 (H-160) is recommended for detection of PC-PLD 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

PC-PLD1 (H-160) is also recommended for detection of PC-PLD 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PC-PLD1 siRNA (h): sc-44000, PC-PLD1 siRNA (m): sc-41629, PC-PLD1 shRNA Plasmid (h): sc-44000-SH, PC-PLD1 shRNA Plasmid (m): sc-41629-SH, PC-PLD1 shRNA (h) Lentiviral Particles: sc-44000-V and PC-PLD1 shRNA (m) Lentiviral Particles: sc-41629-V.

Molecular Weight of PC-PLD1α: 120 kDa.

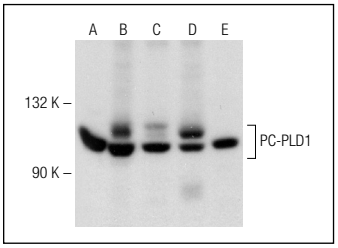
Molecular Weight of PC-PLD1β: 115 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, Caki-1 cell lysate: sc-2224 or PC-12 cell lysate: sc-2250.

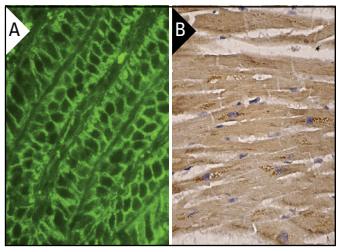
STORAGE

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

DATA



PC-PLD1 (H-160): sc-25512. Western blot analysis of PC-PLD1 expression in PC-12 (**A**), Caki-1 (**B**), HL-60 (**C**), HeLa (**D**) and U-937 (**E**) whole cell lysates.



PC-PLD1 (H-160): sc-25512. Immunofluorescence staining of normal mouse intestine frozen section showing cytoplasmic staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Adibhatla, R.M., et al. 2006. CDP-choline significantly restores phosphatidylcholine levels by differentially affecting phospholipase A_2 and CTP: phosphocholine cytidylyltransferase after stroke. J. Biol. Chem. 281: 6718-6725.
2. Disse, J., et al. 2009. Phospholipase D1 is specifically required for regulated secretion of von Willebrand factor from endothelial cells. Blood 113: 973-980.
3. Zhang, Q., et al. 2010. PLD1-dependent PKCγ activation downstream to Src is essential for the development of pathologic retinal neovascularization. Blood 116: 1377-1385.
4. Han, X., et al. 2011. β-1,3-Glucan-induced host phospholipase D activation is involved in *Aspergillus fumigatus* internalization into type II human pneumocyte A549 cells. PLoS ONE 6: e21468.
5. Krishnan, B., et al. 2011. Dopamine-induced plasticity, phospholipase D (PLD) activity and cocaine-cue behavior depend on PLD-linked metabotropic glutamate receptors in amygdala. PLoS ONE 6: e25639.
6. Chen, F., et al. 2013. Phospholipase D2 mediates signaling by ATPase class I type 8B membrane 1. J. Lipid Res. 54: 379-385.

RESEARCH USE

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