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- Expressversand

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# PC-PLD1 (h): 293T Lysate: sc-117219

## 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 PKC  $\zeta$  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

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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.
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4. Cockcroft, S. 2001. Signalling roles of mammalian phospholipase D1 and D2. *Cell. Mol. Life Sci.* 58: 1674-1687.
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6. Chahdi, A., et al. 2002. Serine/threonine protein kinases synergistically regulate phospholipase D1 and 2 and secretion in RBL-2H3 mast cells. *Mol. Immunol.* 38:1269-1276.
7. Wang, L., et al. 2002. Involvement of phospholipases D1 and D2 in sphingosine 1-phosphate-induced ERK (extracellular-signal-regulated kinase) activation and interleukin-8 secretion in human bronchial epithelial cells. *Biochem. J.* 367: 751-760.
8. Kwun, H.J., et al. 2003. Transcriptional repression of cyclin-dependent kinase inhibitor p21 gene by phospholipase D1 and D2. *FEBS Lett.* 544: 38-44.
7. Ahn, B.H., et al. 2003. Transmodulation between phospholipase D and c-Src enhances cell proliferation. *Mol. Cell. Biol.* 23: 3103-3115.
9. Iyer, S.S., et al. 2004. Phospholipases D1 and D2 coordinately regulate macrophage phagocytosis. *J Immunol.* 173: 2615-2623.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## CHROMOSOMAL LOCATION

Genetic locus: PLD1 (human) mapping to 3q26.31.

## PRODUCT

PC-PLD1 (h): 293T Lysate represents a lysate of human PC-PLD1 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## APPLICATIONS

PC-PLD1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PC-PLD1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

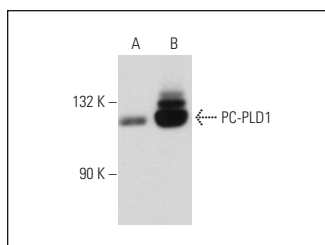
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PC-PLD1 (F-12): sc-28314 is recommended as a positive control antibody for Western Blot analysis of enhanced human PC-PLD1 expression in PC-PLD1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



PC-PLD1 (F-12): sc-28314. Western blot analysis of PC-PLD1 expression in non-transfected: sc-117752 (A) and human PC-PLD1 transfected: sc-117219 (B) 293T whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.