SANTA CRUZ BIOTECHNOLOGY, INC.

PC-PLD3 siRNA (h): sc-97795

BACKGROUND

Virtually every cell uses phosphatidylcholine as a substrate to produce phosphatidic acid and choline. Phosphatidylcholine phospholipase D1, D2, D3, D4 and D5 (PC-PLD1-5) are phospholipid-specific phosphodiesterases that hydrolyze phosphatidylcholine to produce choline. PC-PLD activity in mammalian cells is transiently stimulated upon activation by G protein-coupled and receptor tyrosine kinase cell surface receptors. Both PC-PLD1 (which associates with secretory granules) and PC-PLD2 (which localizes to the plasma membrane) regulate macrophage phagocytosis and, through repression of p21, stimulate cell growth. PC-PLD3 localizes to the membrane of the endoplasmic reticulum (ER) and is thought to be highly expressed in neurons, possibly playing a role in neuronal choline production. PC-PLD4 and PC-PLD5 are both single-pass membrane proteins that localize to the membrane and contain two phosphodiesterase domains. Unlike its family members, PC-PLD5 lacks conserved active sites, suggesting that it has no phospholipase activity.

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.
3. Houle, M.G., et al. 1999. Regulation of phospholipase D by phosphorylation-dependent mechanisms. Biochim. Biophys. Acta 1439: 135-149.
4. Zhao, D., et al. 2001. Generation of choline for acetylcholine synthesis by phospholipase D isoforms. BMC Neurosci. 2: 16.
5. 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.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: PLD3 (human) mapping to 19q13.2.

PRODUCT

PC-PLD3 siRNA (h) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PC-PLD3 shRNA Plasmid (h): sc-97795-SH and PC-PLD3 shRNA (h) Lentiviral Particles: sc-97795-V as alternate gene silencing products.

For independent verification of PC-PLD3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-97795A and sc-97795B.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PC-PLD3 siRNA (h) is recommended for the inhibition of PC-PLD3 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PC-PLD3 gene expression knockdown using RT-PCR Primer: PC-PLD3 (h)-PR: sc-97795-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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