SANTA CRUZ BIOTECHNOLOGY, INC.

PLSCR1 siRNA (m): sc-44380

BACKGROUND

The calcium-dependent plasma membrane protein phospholipid scramblase 1 (PLSCR1) contributes to the transbilayer movement of phosphatidylserine and other membrane phospholipids upon influx of calcium into the cytosol. This movement results in plasma membrane phospholipid remodelling and surface exposure of phosphatidylserine in injured or apoptotic cells, which leads to cell death. Interferons and other cytokines induce expression of PLSCR1, implying that PLSCR1 also functions in cytokine signaling pathways. EGF stilmulation results in tyrosine phosphorylation of PLSCR1 on Tyrosines 69 and 74, which allows it to interact with Shc, and thereby connecting Src kinase activation to stimulation of the EGF receptor.

REFERENCES

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2. Rami, A., et al. 2003. Spatial resolution of phospholipid scramblase 1 (PLSCR1), caspase-3 activation and DNA-fragmentation in the human hippocampus after cerebral ischemia. Neurochem. Int. 43: 79-87.
3. Nanjundan, M., et al. 2003. Plasma membrane phospholipid scramblase 1 promotes EGF-dependent activation of c-Src through the epidermal growth factor receptor. J. Biol. Chem. 278: 37413-37418.
4. Frasch, S.C., et al. 2004. Phospholipid flip-flop and phospholipid scramblase 1 (PLSCR1) co-localize to uropod rafts in formylated Met-Leu-Phe-stimulated neutrophils. J. Biol. Chem. 279: 17625-17633.
5. Dong, B., et al. 2004. Phospholipid scramblase 1 potentiates the antiviral activity of interferon. J. Virol. 78: 8983-8993.
6. Zhao, K.W., et al. 2004. Protein kinase Cδ mediates retinoic acid and phorbol myristate acetate-induced phospholipid scramblase 1 gene expression: its role in leukemic cell differentiation. Blood 104: 3731-3738.
7. Ben-Efraim, I., et al. 2004. Phospholipid scramblase 1 is imported into the nucleus by a receptor-mediated pathway and interacts with DNA. Biochemistry 43: 3518-3526.
8. Chen, M.H., et al. 2005. Phospholipid scramblase 1 (PLSCR1) contains a non-classical nuclear localization signal with unique binding site in importin α. J. Biol. Chem. 280: 10599-10606.

CHROMOSOMAL LOCATION

Genetic locus: Plscr1 (mouse) mapping to 9 E3.3.

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.

PRODUCT

PLSCR1 siRNA (m) is a pool of 3 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 PLSCR1 shRNA Plasmid (m): sc-44380-SH and PLSCR1 shRNA (m) Lentiviral Particles: sc-44380-V as alternate gene silencing products.

For independent verification of PLSCR1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44380A, sc-44380B and sc-44380C.

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

PLSCR1 siRNA (m) is recommended for the inhibition of PLSCR1 expression in mouse 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 PLSCR1 gene expression knockdown using RT-PCR Primer: PLSCR1 (m)-PR: sc-44380-PR (20 µl, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.