SANTA CRUZ BIOTECHNOLOGY, INC.

PSS2 siRNA (m): sc-72368

BACKGROUND

Phosphatidylserine synthases (PSS) are widespread, ancestral enzymes with a highly conserved function. PSS is a membrane protein responsible for catalyzing the calcium-dependent base exchange of serine with existing phospholipid head groups in the biosynthesis of phosphatidylserine (PtdSer), a major anionic phospholipid expressed on the inner layer of the plasma membrane. Two forms of PSS exist, PSS1 and PSS2, both localizing to the mitochondria-associated membrane. These two forms are encoded by different genes but share very similar characteristics, differing only in their substrate specificity. The primary substrate for PSS1 is phosphatidylcholine and the substrate for PSS2 is phosphatidylethanolamine. PSS1 and PSS2 are directly inhibited by PtdSer and this inhibition is important for feedback control of PtdSer synthesis. Cells overexpressing PSS1 and PSS2 are significantly resistant to UV-induced apoptosis.

REFERENCES

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2. Stone, S.J. and Vance, J.E. 2000. Phosphatidylserine synthase-1 and -2 are localized to mitochondria-associated membranes. J. Biol. Chem. 275: 34534-34540.
3. Kuge, O., et al. 2003. Purification and characterization of Chinese hamster phosphatidylserine synthase 2. J. Biol. Chem. 278: 42692-42698.
4. Kuge, O. and Nishijima, M. 2003. Biosynthetic regulation and intracellular transport of phosphatidylserine in mammalian cells. J. Biochem. 133: 397-403.
5. Mozzi, R., et al. 2003. Metabolism and functions of phosphatidylserine in mammalian brain. Neurochem. Res. 28: 195-214.
6. Yu, A., et al. 2004. Resistance to UV-induced apoptosis in Chinese hamster ovary cells overexpressing phosphatidylserine synthases. Biochem. J. 381: 609-618.
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8. Grandmaison, P.A., et al. 2004. Externalization of phosphatidylserine during apoptosis does not specifically require either isoform of phosphatidylserine synthase. Biochim. Biophys. Acta 1636: 1-11.
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CHROMOSOMAL LOCATION

Genetic locus: Ptdss2 (mouse) mapping to 7 F5.

PROTOCOLS

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

PRODUCT

PSS2 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 PSS2 shRNA Plasmid (m): sc-72368-SH and PSS2 shRNA (m) Lentiviral Particles: sc-72368-V as alternate gene silencing products.

For independent verification of PSS2 (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-72368A, sc-72368B and sc-72368C.

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

PSS2 siRNA (m) is recommended for the inhibition of PSS2 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 PSS2 gene expression knockdown using RT-PCR Primer: PSS2 (m)-PR: sc-72368-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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