

SERINC4 siRNA (m): sc-153348

BACKGROUND

SERINC4 (serine incorporator 4) is a 518 amino acid multi-pass membrane protein that belongs to the TDE1 family. The SERINC4 protein incorporates a polar amino acid serine into membranes and facilitates the synthesis of two serine-derived lipids, phosphatidylserine and sphingolipids. Because SERINC4 proteins contain 11 transmembrane segments resembling amino acid transporters, SERINC4 may also function as an L-serine transporter by carrying serine molecules into the hydrophobic milieu of membrane lipid bilayers. Existing as two alternatively spliced isoforms, the SERINC4 gene is conserved in canine, bovine, mouse, rat, chicken and zebrafish, and maps to human chromosome 15q15.3. Encoding more than 700 genes, chromosome 15 is made up of approximately 106 million base pairs and consists of about 3% of the human genome. Angelman and Prader-Willi syndromes are associated with loss of function or deletion of genes in the 15q11-q13 region.

REFERENCES

1. Inuzuka, M., Hayakawa, M. and Ingi, T. 2005. SERINC, an activity-regulated protein family, incorporates serine into membrane lipid synthesis. *J. Biol. Chem.* 280: 35776-35783.
2. Zody, M.C., Garber, M., Sharpe, T., Young, S.K., Rowen, L., O'Neill, K., Whittaker, C.A., Kamal, M., Chang, J.L., Cuomo, C.A., Dewar, K., Fitzgerald, M.G., Kodira, C.D., Madan, A., Qin, S., Yang, X., Abbasi, N., et al. 2006. Analysis of the DNA sequence and duplication history of human chromosome 15. *Nature* 440: 671-675.
3. Diene, G., Postel-Vinay, A., Pinto, G., Polak, M. and Tauber, M. 2007. The Prader-Willi syndrome. *Ann. Endocrinol.* 68: 129-137.
4. Lalonde, M. and Calciano, M.A. 2007. Molecular epigenetics of Angelman syndrome. *Cell. Mol. Life Sci.* 64: 947-960.
5. Makoff, A.J. and Flomen, R.H. 2007. Detailed analysis of 15q11-q14 sequence corrects errors and gaps in the public access sequence to fully reveal large segmental duplications at breakpoints for Prader-Willi, Angelman, and inv dup(15) syndromes. *Genome Biol.* 8: R114.
6. Vieira, A.R., McHenry, T.G., Daack-Hirsch, S., Murray, J.C. and Marazita, M.L. 2008. Candidate gene/loci studies in cleft lip/palate and dental anomalies finds novel susceptibility genes for clefts. *Genet. Med.* 10: 668-674.

CHROMOSOMAL LOCATION

Genetic locus: Serinc4 (mouse) mapping to 2 E5.

PRODUCT

SERINC4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SERINC4 shRNA Plasmid (m): sc-153348-SH and SERINC4 shRNA (m) Lentiviral Particles: sc-153348-V as alternate gene silencing products.

For independent verification of SERINC4 (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-153348A, sc-153348B and sc-153348C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SERINC4 siRNA (m) is recommended for the inhibition of SERINC4 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 μ M in 66 μ l. 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 SERINC4 gene expression knockdown using RT-PCR Primer: SERINC4 (m)-PR: sc-153348-PR (20 μ l). 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.

PROTOCOLS

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