

SERINC1 siRNA (h): sc-95506

BACKGROUND

SERINC1 (serine incorporator 1) is a 453 amino acid multi-pass membrane protein that belongs to the TDE1 family. Localizing to endoplasmic reticulum membrane, the SERINC1 protein enhances the incorporation of serine into phosphatidylserine and sphingolipids. Serinc1 expression in rat brain overlaps that of glutamatergic excitatory neurons and is induced by kainite-induced seizure stimulation. Because SERINC proteins contain 11 transmembrane segments resembling amino acid transporters, SERINC1 may also function as an L-serine transporter by carrying serine molecules into the hydrophobic milieu of membrane lipid bilayers. SERINC1 interacts with SPTLC1. The SERINC1 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, fruit fly, mosquito, *C. elegans*, *S. pombe*, *S. cerevisiae*, *K. lactis*, *E. gossypii*, *M. grisea*, *N. crassa*, *A. thaliana* and rice, and maps to human chromosome 6p22.31.

REFERENCES

- Clark, H.F., Gurney, A.L., Abaya, E., Baker, K., Baldwin, D., Brush, J., Chen, J., Chow, B., Chui, C., Crowley, C., Currell, B., Deuel, B., Dowd, P., Eaton, D., Foster, J., Grimaldi, C., Gu, Q., Hass, P.E., Heldens, S., Huang, A., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. *Genome Res.* 13: 2265-2270.
- Mungall, A.J., Palmer, S.A., Sims, S.K., Edwards, C.A., Ashurst, J.L., Wilming, L., Jones, M.C., Horton, R., Hunt, S.E., Scott, C.E., Gilbert, J.G., Clamp, M.E., Bethel, G., Milne, S., Ainscough, R., Almeida, J.P., et al. 2003. The DNA sequence and analysis of human chromosome 6. *Nature* 425: 805-811.
- 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.
- Bossolasco, M., Veillette, F., Bertrand, R. and Mes-Masson, A.M. 2006. Human TDE1, a TDE1/TMS family member, inhibits apoptosis *in vitro* and stimulates *in vivo* tumorigenesis. *Oncogene* 25: 4549-4558.
- Cowart, L.A. and Hannun, Y.A. 2007. Selective substrate supply in the regulation of yeast *de novo* sphingolipid synthesis. *J. Biol. Chem.* 282: 12330-12340.
- 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: SERINC1 (human) mapping to 6q22.31.

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

SERINC1 siRNA (h) 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 SERINC1 shRNA Plasmid (h): sc-95506-SH and SERINC1 shRNA (h) Lentiviral Particles: sc-95506-V as alternate gene silencing products.

For independent verification of SERINC1 (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-95506A, sc-95506B and sc-95506C.

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

SERINC1 siRNA (h) is recommended for the inhibition of SERINC1 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 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 SERINC1 gene expression knockdown using RT-PCR Primer: SERINC1 (h)-PR: sc-95506-PR (20 μ l, 568 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.