SANTA CRUZ BIOTECHNOLOGY, INC.

SIL1 siRNA (m): sc-61554

BACKGROUND

The UPR-regulated gene SIL1 encodes the protein named nucleotide exchange factor SIL1. SIL1 is an N-linked glycoprotein that localizes to the endoplasmic reticulum (ER) and contains an N-terminal ER targeting sequence, two putative N-glycosylation sites and a C-terminal ER-retention signal. It acts as a nucleotide exchange factor for ER lumenal chaperone HSPA5 and is important for both protein translocation and protein folding in the ER. SIL1 is highly expressed in liver, kidney and placenta, and shows moderate expression in spleen, thymus, heart, colon and ovary, while demonstrating weak expression in the brain. During fetal development, SIL1 is expressed at high levels in kidney, lung and liver. Defects in the SIL1 gene can cause Marinesco-Sjögren syndrome (MSS), an autosomal recessive multisystem disorder characterized by progressive myopathy, cerebellar ataxia and cataracts.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608005. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Steel, G.J., et al. 2004. Coordinated activation of HSP 70 chaperones. Science 303: 98-101.
3. Zhao, L., et al. 2005. Protein accumulation and neurodegener by disruption of SIL1, a cochaperone of BiP. Nat. Genet. 37: 974-979.
4. Zoghbi, H.Y. 2005. SILencing misbehaving proteins. Nat. Genet. 37: 1302-1303.
5. Anttonen, A.K., et al. 2005. The gene disrupted in Marinesco-Sjögren syndrome encodes SIL1, an HSPA5 cochaperone. Nat. Genet. 37: 1309-1311.
6. Senderek, J., et al. 2005. Mutations in SIL1 cause Marinesco-Sjögren syndrome, a cerebellar ataxia with cataract and myopathy. Nat. Genet. 37: 1312-1314.

CHROMOSOMAL LOCATION

Genetic locus: Sil1 (mouse) mapping to 18 B1.

PRODUCT

SIL1 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 SIL1 shRNA Plasmid (m): sc-61554-SH and SIL1 shRNA (m) Lentiviral Particles: sc-61554-V as alternate gene silencing products.

For independent verification of SIL1 (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-61554A, sc-61554B and sc-61554C.

PROTOCOLS

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

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

SIL1 siRNA (m) is recommended for the inhibition of SIL1 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 SIL1 gene expression knockdown using RT-PCR Primer: SIL1 (m)-PR: sc-61554-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.