

RGSL1 siRNA (m): sc-152842

BACKGROUND

The RGSL1, RGS16 and RGS8 genes within the 1q25.3 region belong to the novel family of regulators of G protein signaling (RGS) genes, which increase the GTPase activity of the G α subunit to attenuate signaling from the G protein-coupled receptor. RGSL1 (regulator of G-protein signaling like 1) is a 1,076 amino acid multi-pass membrane protein that contains one RGS domain. The RGSL1 protein exhibits high expression in testis with lower expression in bone marrow and prostate. The 1q25.3 region is said to be highly unstable in breast tumors comprising a cluster of chromosomal breakpoints, intragenic microdeletions, frequent allelic imbalance correlating with long metastasis-free survival. Mutations in RGSL1 have been found in breast cancer. Existing as six alternatively spliced isoforms, the RGSL1 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken and zebrafish. The RGSL1 gene contains 15 exons and spans 67.1 kb.

REFERENCES

1. Silva, A.P., Salim, A.C., Bulgarelli, A., de Souza, J.E., Osório, E., Caballero, O.L., Iseli, C., Stevenson, B.J., Jongeneel, C.V., de Souza, S.J., Simpson, A.J. and Camargo, A.A. 2003. Identification of 9 novel transcripts and two RGSL genes within the hereditary prostate cancer region (HPC1) at 1q25. *Gene* 310: 49-57.
2. Tosetti, P., Parente, V., Taglietti, V., Dunlap, K. and Toselli, M. 2003. Chick RGS2L demonstrates concentration-dependent selectivity for pertussis toxin-sensitive and -insensitive pathways that inhibit L-type Ca²⁺ channels. *J. Physiol.* 549: 157-169.
3. Gregory, S.G., Barlow, K.F., McLay, K.E., Kaul, R., Swarbreck, D., Dunham, A., Scott, C.E., Howe, K.L., Woodfine, K., Spencer, C.C., Jones, M.C., Gillson, C., Searle, S., Zhou, Y., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611012. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Wiechec, E., Overgaard, J. and Hansen, L.L. 2008. A fragile site within the HPC1 region at 1q25.3 affecting RGS16, RGSL1, and RGSL2 in human breast carcinomas. *Genes Chromosomes Cancer* 47: 766-780.
6. Wiechec, E., Wiuf, C., Overgaard, J. and Hansen, L.L. 2011. High-resolution melting analysis for mutation screening of RGSL1, RGS16, and RGS8 in breast cancer. *Cancer Epidemiol. Biomarkers Prev.* 20: 397-407.

CHROMOSOMAL LOCATION

Genetic locus: Rgs1l (mouse) mapping to 1 G3.

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

RGSL1 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 RGSL1 shRNA Plasmid (m): sc-152842-SH and RGSL1 shRNA (m) Lentiviral Particles: sc-152842-V as alternate gene silencing products.

For independent verification of RGSL1 (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-152842A, sc-152842B and sc-152842C.

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

RGSL1 siRNA (m) is recommended for the inhibition of RGSL1 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 RGSL1 gene expression knockdown using RT-PCR Primer: RGSL1 (m)-PR: sc-152842-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.