

# SGSM1 siRNA (h): sc-76491

## BACKGROUND

Small G proteins act as molecular switches for regulation of a variety of cellular processes, such as nuclear transport, signal transduction, membrane trafficking and protein synthesis. SGSM1 (small G protein signaling modulator 1), also known as RUTBC2, is a 1,148 amino acid protein that localizes to the Golgi apparatus and is a member of the RUTBC family. Consisting of one Rab-GAP TBC domain and a RUN domain, SGSM1 is mainly expressed in brain, heart and testis. SGSM1 interacts with RAP and RAB subfamily members of the small G protein superfamily, and functions as a modulator of the small G protein RAP and RAB-mediated neuronal signal transduction and vesicular transportation pathways. SGSM1 is encoded by a gene located on human chromosome 22q11.23.

## REFERENCES

- Gilbert, F. 1998. Disease genes and chromosomes: disease maps of the human genome. *Chromosome 22. Genet. Test.* 2: 89-97.
- Schwab, S.G., et al. 1999. Chromosome 22 workshop report. *Am. J. Med. Genet.* 88: 276-278.
- Yang, H., et al. 2007. Identification of three novel proteins (SGSM1, 2, 3) which modulate small G protein (RAP and RAB)-mediated signaling pathway. *Genomics* 90: 249-260.
- Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611417. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Williams, J.A., et al. 2009. Small G proteins as key regulators of pancreatic digestive enzyme secretion. *Am. J. Physiol. Endocrinol. Metab.* 296: E405-E414.

## CHROMOSOMAL LOCATION

Genetic locus: SGSM1 (human) mapping to 22q11.23.

## PRODUCT

SGSM1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SGSM1 shRNA Plasmid (h): sc-76491-SH and SGSM1 shRNA (h) Lentiviral Particles: sc-76491-V as alternate gene silencing products.

For independent verification of SGSM1 (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-76491A, sc-76491B and sc-76491C.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

SGSM1 siRNA (h) is recommended for the inhibition of SGSM1 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  $\mu$ M in 66  $\mu$ 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 SGSM1 gene expression knockdown using RT-PCR Primer: SGSM1 (h)-PR: sc-76491-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.