SANTA CRUZ BIOTECHNOLOGY, INC.

SGSM2 siRNA (h): sc-93805

BACKGROUND

SGSM2 (small G protein signaling modulator 2), also known as RUTBC1 (RUN and TBC1 domain-containing protein 1) is a 1,006 amino acid protein that belongs to the RUTBC family. The SGSM2 protein interacts with Rab 4A, Rab 11A, Rap 1A, Rap 1B, Rap 2A and Rap 2B, but not with Rab 27a. Widely expressed, the SGSM2 protein contains a C-terminal Rab-GAP TBC domain and an N-terminal RUN domain. Like SGSM1 and SGSM3, SGSM2 contains a RAP-interacting domain (RAPID), containing five blocks of conserved sequence following the RUN motif. The length of most exons in SGSM1 is the same as that of the corresponding exons in SGSM2, and therefore SGSM2 and SGSM1 most likely have been generated from the same ancestral gene by gene duplication during the evolutionary process. Existing as 4 alternatively spliced isoforms and containing 23 exons, the SGSM2 gene is conserved in canine, mouse, rat and chicken, and maps to human chromosome 17p13.3.

REFERENCES

1. Ishikawa, K., Nagase, T., Nakajima, D., Seki, N., Ohira, M., Miyajima, N., Tanaka, A., Kotani, H., Nomura, N. and Ohara, O. 1997. Prediction of the coding sequences of unidentified human genes. VIII. 78 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 4: 307-313.
2. Zody, M.C., Garber, M., Adams, D.J., Sharpe, T., Harrow, J., Lupski, J.R., Nicholson, C., Searle, S.M., Wilming, L., Young, S.K., Abouelleil, A., Allen, N.R., Bi, W., Bloom, T., Borowsky, M.L., Bugalter, B.E., Butler, J., et al. 2006. DNA sequence of human chromosome 17 and analysis of rearrangement in the human lineage. Nature 440: 1045-1049.
3. Yang, H., Sasaki, T., Minoshima, S. and Shimizu, N. 2007. Identification of three novel proteins (SGSM1, 2, 3) which modulate small G protein (RAP and RAB)-mediated signaling pathway. Genomics 90: 249-260.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611418. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ishibashi, K., Kanno, E., Itoh, T. and Fukuda, M. 2009. Identification and characterization of a novel Tre-2/Bub2/Cdc16 (TBC) protein that possesses Rab3A-GAP activity. Genes Cells 14: 41-52.
6. Bi, W., Sapir, T., Shchelochkov, O.A., Zhang, F., Withers, M.A., Hunter, J.V., Levy, T., Shinder, V., Peiffer, D.A., Gunderson, K.L., Nezarati, M.M., Shotts, V.A., Amato, S.S., Savage, S.K., Harris, D.J., Day-Salvatore, D.L., et al. 2009. Increased LIS1 expression affects human and mouse brain development. Nat. Genet. 41: 168-177.
7. Tsai, F.J., Yang, C.F., Chen, C.C., Chuang, L.M., Lu, C.H., Chang, C.T., Wang, T.Y., Chen, R.H., Shiu, C.F., Liu, Y.M., Chang, C.C., Chen, P., Chen, C.H., Fann, C.S., Chen, Y.T. and Wu, J.Y. 2010. A genome-wide association study identifies susceptibility variants for type 2 diabetes in Han Chinese. PLoS Genet. 6: e1000847.

CHROMOSOMAL LOCATION

Genetic locus: SGSM2 (human) mapping to 17p13.3.

RESEARCH USE

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

PRODUCT

SGSM2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SGSM2 shRNA Plasmid (h): sc-93805-SH and SGSM2 shRNA (h) Lentiviral Particles: sc-93805-V as alternate gene silencing products.

For independent verification of SGSM2 (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-93805A, sc-93805B and sc-93805C.

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

SGSM2 siRNA (h) is recommended for the inhibition of SGSM2 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 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 SGSM2 gene expression knockdown using RT-PCR Primer: SGSM2 (h)-PR: sc-93805-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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