SANTA CRUZ BIOTECHNOLOGY, INC.

SGSM3 siRNA (h): sc-76492

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. SGSM3 (small G protein signaling modulator 3), also known as MAP (merlin-associated protein), RUSC3 or RUTBC3, is a 749 amino acid widely expressed cytoplasmic protein that belongs to the small G protein signaling modulator family. Existing as two alternatively spliced isoforms, SGSM3 contains a Rab-GAP TBC domain, a RUN domain and a SH3 domain. The degradation of SGSM3 is promoted by its interaction with connexin 43. SGSM3 is associated with several members of the Ras-related superfamily of guanine nucleotide binding proteins and is suggested to play a cooperative role in NF2-mediated growth suppression of cells. SGSM3 is encoded by a gene located on human chromosome 22q13.1.

REFERENCES

1. Lee, I.K., et al. 2004. MAP, a protein interacting with a tumor suppressor, merlin, through the run domain. Biochem. Biophys. Res. Commun. 325: 774-783.
2. Lee, J.Y., et al. 2004. Merlin, a tumor suppressor, interacts with transactivation-responsive RNA-binding protein and inhibits its oncogenic activity. J. Biol. Chem. 279: 30265-30273.
3. Ryu, C.H., et al. 2005. The merlin tumor suppressor interacts with Ral guanine nucleotide dissociation stimulator and inhibits its activity. Oncogene 24: 5355-5364.
4. Lee, J.Y., et al. 2006. Merlin facilitates ubiquitination and degradation of transactivation-responsive RNA-binding protein. Oncogene 25: 1143-1152.
5. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610440. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Ye, K. 2007. Phosphorylation of merlin regulates its stability and tumor suppressive activity. Cell Adh. Migr. 1: 196-198.
7. 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.

CHROMOSOMAL LOCATION

Genetic locus: SGSM3 (human) mapping to 22q13.1.

PRODUCT

SGSM3 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 SGSM3 shRNA Plasmid (h): sc-76492-SH and SGSM3 shRNA (h) Lentiviral Particles: sc-76492-V as alternate gene silencing products.

For independent verification of SGSM3 (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-76492A, sc-76492B and sc-76492C.

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

SGSM3 siRNA (h) is recommended for the inhibition of SGSM3 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 SGSM3 gene expression knockdown using RT-PCR Primer: SGSM3 (h)-PR: sc-76492-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.

PROTOCOLS

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