SANTA CRUZ BIOTECHNOLOGY, INC.

SPDSY siRNA (h): sc-88193

BACKGROUND

SPDSY (spermidine synthase), also known as SRM, PAPT (putrescine aminopropyltransferase), SPS1 or SRML1, is a 302 amino acid protein whose activity is believed to be regulated by decarboxylated S-adenosylmethionine availability. One of four enzymes in the polyamine-biosynthetic pathway, SPDSY carries out the final steps of spermidine biosynthesis. SPDSY belongs to the spermidine/spermine synthase family and exists as a homodimer or homotetramer. Localizing extracellularly to the cytosol and to the nucleus, SPDSY interacts with THTR1 and DMWD and acts as a ubiquitous polycationic mediator of cell growth and differentiation. The gene encoding SPDSY maps to human chromosome 1p36.22. Chromosome 1 is the largest human chromosome spanning about 260 million base pairs, contains about 3,000 genes and makes up 8% of the human genome.

REFERENCES

1. Wahlfors, J., et al. 1990. Human spermidine synthase: cloning and primary structure. DNA Cell Biol. 9: 103-110.
2. Online Mendelian Inheritance in Man, OMIM™. 1990. Johns Hopkins University, Baltimore, MD. MIM Number: 182891. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Myöhänen, S., et al. 1991. Human spermidine synthase gene: structure and chromosomal localization. DNA Cell Biol. 10: 467-474.
4. Kauppinen, L., et al. 1993. Transgenic mice over-expressing the human spermidine synthase gene. Biochem. J. 293: 513-516.
5. Kauppinen, L. 1995. Regulation of the human spermidine synthase mRNA translation by its 5'-untranslated region. FEBS Lett. 365: 61-65.
6. Nishikawa, Y., et al. 1997. Inhibition of spermidine synthase gene expression by transforming growth factor-β 1 in hepatoma cells. Biochem. J. 321: 537-543.
7. Wu, H., et al. 2007. Structure and mechanism of spermidine synthases. Biochemistry 46: 8331-8339.

CHROMOSOMAL LOCATION

Genetic locus: SRM (human) mapping to 1p36.22.

PRODUCT

SPDSY 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 SPDSY shRNA Plasmid (h): sc-88193-SH and SPDSY shRNA (h) Lentiviral Particles: sc-88193-V as alternate gene silencing products.

For independent verification of SPDSY (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-88193A, sc-88193B and sc-88193C.

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

SPDSY siRNA (h) is recommended for the inhibition of SPDSY 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 SPDSY gene expression knockdown using RT-PCR Primer: SPDSY (h)-PR: sc-88193-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.