SANTA CRUZ BIOTECHNOLOGY, INC.

SNRPA siRNA (h): sc-97298

BACKGROUND

SNRPA (small nuclear ribonucleoprotein polypeptide A), also known as U1A (U1 snRNP protein A), is a component of the RNA spliceosome, a complex of proteins that are required for the precise excision of introns from pre-messenger RNA (pre-mRNA). Localizing to the nucleus, SNRPA contains two RRM (RNA recognition motif) domains, namely RRM1 and RRM2, and RRM1 specifically associates with the stem loop II of U1 snRNA (small nuclear RNA). In addition to functioning as a component of the U1 snRNP, SNRPA negatively regulates polyadenylation of SNRPA pre-mRNA, thereby negatively regulating itself. By inhibiting the addition of a polyA tail that would allow the pre-mRNA to mature, SNRPA causes the nuclear exosome degradation of the SNRPA pre-mRNA. At least 16% of cellular SNRPA also functions in an snRNP-free form (SF-A) that complexes with a group of non-snRNP proteins.

REFERENCES

1. Schonk, D., et al. 1990. Assignment of seven genes to distinct intervals on the midportion of human chromosome 19q surrounding the myotonic dystrophy gene region. Cytogenet. Cell Genet. 54: 15-19.
2. Lutz, C.S., et al. 1996. Interaction between the U1 snRNP-A protein and the 160 kDa subunit of cleavage-polyadenylation specificity factor increases polyadenylation efficiency *in vitro*. Genes Dev. 10: 325-337.
3. Tang, J. and Rosbash, M. 1996. Characterization of yeast U1 snRNP A protein: identification of the N-terminal RNA binding domain (RBD) binding site and evidence that the C-terminal RBD functions in splicing. RNA 2: 1058-1070.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 182285. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Liang, S. and Lutz, C.S. 2006. p54nrb is a component of the snRNP-free U1A (SF-A) complex that promotes pre-mRNA cleavage during polyadenylation. RNA 12: 111-121.

CHROMOSOMAL LOCATION

Genetic locus: SNRPA (human) mapping to 19q13.2.

PRODUCT

SNRPA 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 SNRPA shRNA Plasmid (h): sc-97298-SH and SNRPA shRNA (h) Lentiviral Particles: sc-97298-V as alternate gene silencing products.

For independent verification of SNRPA (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-97298A, sc-97298B and sc-97298C.

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

SNRPA siRNA (h) is recommended for the inhibition of SNRPA 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.

GENE EXPRESSION MONITORING

SNRPA (B-12): sc-376027 is recommended as a control antibody for monitoring of SNRPA gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SNRPA gene expression knockdown using RT-PCR Primer: SNRPA (h)-PR: sc-97298-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.