SANTA CRUZ BIOTECHNOLOGY, INC.

SFRS14 siRNA (h): sc-97679

BACKGROUND

SFRS14 (splicing factor, arginine/serine-rich 14) is a 1,082 amino acid protein that belongs to the SR-related family of pre-mRNA processing factors. SFRS14 contains an arginine/serine-rich region at its N-terminus, two SURP motif repeats and a C-terminal G-patch domain. The SURP motif is a domain that is commonly found in splicing proteins, while the G-patch domain is typical of RNA-binding proteins in eukaryotes. Expressed in fetal brain, fetal kidney and adult testis, SFRS14 localizes to the nucleus and is believed to participate in pre-mRNA splicing mechanisms. In addition, SFRS14 contains several potential phosphorylation sites, suggesting that its activity may be regulated by phosphorylation. Three isoforms exist for SFRS14 due to alternative splicing events.

REFERENCES

1. Nagase, T., et al. 1997. Prediction of the coding sequences of unidentified human genes. VII. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro*. DNA Res. 4: 141-150.
2. Sampson, N.D. and Hewitt, J.E. 2003. SF4 and SFRS14, two related putative splicing factors on human chromosome 19p13.11. Gene 305: 91-100.
3. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 607993. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Yiu, W.H., et al. 2004. Cloning and characterization of a novel endoplasmic reticulum localized G-patch domain protein, IER3IP1. Gene 337: 37-44.
5. Kuwasako, K., et al. 2006. Solution structures of the SURP domains and the subunit-assembly mechanism within the splicing factor SF3a complex in 17S U2 SnRNP. Structure 14: 1677-1689.
6. Rosenquist, T.H., et al. 2007. Microarray analysis of homocysteine-responsive genes in cardiac neural crest cells *in vitro*. Dev. Dyn. 236: 1044-1054.

CHROMOSOMAL LOCATION

Genetic locus: SUGP2 (human) mapping to 19p13.11.

PRODUCT

SFRS14 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 SFRS14 shRNA Plasmid (h): sc-97679-SH and SFRS14 shRNA (h) Lentiviral Particles: sc-97679-V as alternate gene silencing products.

For independent verification of SFRS14 (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-97679A, sc-97679B and sc-97679C.

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

SFRS14 siRNA (h) is recommended for the inhibition of SFRS14 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

SFRS14 (S-24): sc-101131 is recommended as a control antibody for monitoring of SFRS14 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 SFRS14 gene expression knockdown using RT-PCR Primer: SFRS14 (h)-PR: sc-97679-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.