SANTA CRUZ BIOTECHNOLOGY, INC.

SFRS12 siRNA (h): sc-91849

BACKGROUND

Pre-mRNA splicing enhancer elements are short RNA sequences capable of activating weak splice sites in nearby introns that are required for accurate splice site recognition and the control of alternative splicing. Splicing enhancer elements contain specific binding sites for serine/arginine (SR)-rich splicing factors, which include SC35, 9G8, SRp20 and SF2/ASF. The family of SR factors all contain one or more RNA recognition motifs (RRM) and an SR-rich domain. They are not only essential for constitutive splicing, but also regulate splicing in a concentration-dependent manner by influencing the selection of alternative splice sites. Splicing factor arginine/serine-rich 12 (SFRS12), also designated serine-arginine-rich-splicing regulatory protein 86 (SRrp86) or splicing regulatory protein 508 (SRrp508), contains one RRM and two SR-rich domains separated by an unusual glutamic acid-lysine (EK)-rich region. SFRS12 interacts with all core SR proteins as well as other splicing regulatory proteins, such as SAF-B, hnRNP G, YB-1 and p72. SFRS12 both positively and negatively modulates the activity of the SR proteins and its EK domain can inhibit both constitutive and alternative splicing. SFRS12 also interacts with a lysine-rich zinc finger domain-containing protein p18SRP, which is down-regulated in the brain of Alzheimer's disease (AD) patients.

REFERENCES

1. Fu, X.D. 1993. Specific commitment of different pre-mRNAs to splicing by single SR proteins. Nature 365: 82-85.
2. Caceres, J.F., et al. 1998. A specific subset of SR proteins shuttles continuously between the nucleus and the cytoplasm. Genes Dev. 12: 55-66.
3. Schaal, T.D., et al. 1999. Selection and characterization of pre-mRNA splicing enhancers: identification of novel SR protein-specific enhancer sequences. Mol. Cell. Biol. 19: 1705-1719.
4. Cavaloc, Y., et al. 1999. The splicing factors 9G8 and SRp20 transactivate splicing through different and specific enhancers. RNA 5: 468-483.
5. Barnard, D.C. and Patton, J.G. 2000. Identification and characterization of a novel serine-arginine-rich splicing regulatory protein. Mol. Cell. Biol. 20: 3049-3057.
6. Li, J., et al. 2002. A unique glutamic acid-lysine (EK) domain acts as a splicing inhibitor. J. Biol. Chem. 277: 39485-39492.

CHROMOSOMAL LOCATION

Genetic locus: SREK1 (human) mapping to 5q12.3.

PRODUCT

SFRS12 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 SFRS12 shRNA Plasmid (h): sc-91849-SH and SFRS12 shRNA (h) Lentiviral Particles: sc-91849-V as alternate gene silencing products.

For independent verification of SFRS12 (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-91849A, sc-91849B and sc-91849C.

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

SFRS12 siRNA (h) is recommended for the inhibition of SFRS12 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 SFRS12 gene expression knockdown using RT-PCR Primer: SFRS12 (h)-PR: sc-91849-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.