

SFRS15 siRNA (m): sc-153403

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 15 (SFRS15), also designated CTD-binding SR-like protein RA4, contains one RRM and one SR-rich domains. SFRS15 interacts with C-terminal repetitive domain (CTD) of Pol II and is believed to functionally and physically link transcription and pre-mRNA processing. Localized to the nucleus, SFRS15 is expressed as two isoforms produced by alternative splicing.

REFERENCES

1. Fu, X.D. 1993. Specific commitment of different pre-mRNAs to splicing by single SR proteins. *Nature* 365: 82-85.
2. Yuryev, A., Patturajan, M., Litingtung, Y., Joshi, R.V., Gentile, C., Gebara, M. and Corden, J.L. 1996. The C-terminal domain of the largest subunit of RNA polymerase II interacts with a novel set of serine/arginine-rich proteins. *Proc. Natl. Acad. Sci. USA* 93: 6975-6980.
3. Cáceres, J.F., Screaton, G.R. and Krainer, A.R. 1998. A specific subset of SR proteins shuttles continuously between the nucleus and the cytoplasm. *Genes Dev.* 12: 55-66.
4. Schaal, T.D. and Maniatis, T. 1999. Selection and characterization of pre-mRNA splicing enhancers: identification of novel SR protein-specific enhancer sequences. *Mol. Cell. Biol.* 19: 1705-1719.
5. Fomenkov, A., Huang, Y.P., Topaloglu, O., Brechman, A., Osada, M., Fomenkova, T., Yuriditsky, E., Trink, B., Sidransky, D. and Ratovitski, E. 2003. P63 α mutations lead to aberrant splicing of keratinocyte growth factor receptor in the Hay-Wells syndrome. *J. Biol. Chem.* 278: 23906-23914.
6. Kimura, K., Wakamatsu, A., Suzuki, Y., Ota, T., Nishikawa, T., Yamashita, R., Yamamoto, J., Sekine, M., Tsuritani, K., Wakaguri, H., Ishii, S., Sugiyama, T., Saito, K., Isono, Y., Irie, R., Kushida, N., Yoneyama, T., et al. 2006. Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. *Genome Res.* 16: 55-65.
7. Becker, R., Loll, B. and Meinhart, A. 2008. Snapshots of the RNA processing factor SCAF8 bound to different phosphorylated forms of the carboxyl-terminal domain of RNA polymerase II. *J. Biol. Chem.* 283: 22659-22669.

CHROMOSOMAL LOCATION

Genetic locus: Scaf4 (mouse) mapping to 16 C3.3.

PROTOCOLS

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

PRODUCT

SFRS15 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SFRS15 shRNA Plasmid (m): sc-153403-SH and SFRS15 shRNA (m) Lentiviral Particles: sc-153403-V as alternate gene silencing products.

For independent verification of SFRS15 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153403A, sc-153403B and sc-153403C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SFRS15 siRNA (m) is recommended for the inhibition of SFRS15 expression in mouse 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 μ M in 66 μ l. 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 SFRS15 gene expression knockdown using RT-PCR Primer: SFRS15 (m)-PR: sc-153403-PR (20 μ l). 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.