

splicing factor 1 siRNA (h): sc-44115

BACKGROUND

Mammalian splicing factor 1 (designated SF1, zinc finger protein 162, ZFM1, CW17R and mammalian branch point binding protein [mBBP]) specifically recognizes the seven-nucleotide branch point sequence located at 3' splice sites and participates in the assembly of early spliceosomal complexes. Splicing factor 1 functions as a transcriptional repressor and may control both proliferation and expression of pro-inflammatory gene products in smooth muscle cells. In addition, cytokine-induced downregulation of splicing factor 1 expression may contribute to the pathogenesis of hyperproliferative inflammatory diseases. The structure of splicing factor 1 contains a nuclear transport domain, a metal binding motif, and glutamine- and proline-rich regions. Human splicing factor 1 also exists as several different isoforms, H1-isoform and Bo-isoform, produced by alternative splicing events. The human splicing factor 1 gene is located on chromosome 11 close to the gene encoding menin, the gene responsible for multiple endocrine neoplasia-type 1 (MEN1).

REFERENCES

1. Toda, T., et al. 1994. Isolation and characterization of a novel gene encoding nuclear protein at a locus (D11S636) tightly linked to multiple endocrine neoplasia type 1 (MEN1). *Hum. Mol. Genet.* 3: 465-470.
2. Kramer, A., et al. 1998. Diverse modes of alternative splicing of human splicing factor SF1 deduced from the exon-intron structure of the gene. *Gene* 211: 29-37.
3. Peled-Zehavi, H., et al. 2001. Recognition of RNA branch point sequences by the KH domain of splicing factor 1 (mammalian branch point binding protein) in a splicing factor complex. *Mol. Cell. Biol.* 21: 5232-5241.
4. Liu, Z., et al. 2001. Structural basis for recognition of the intron branch site RNA by splicing factor 1. *Science* 294: 1098-1102.
5. Cattaruzza, M., et al. 2002. Cytokine-induced down-regulation of zfm1/splicing factor-1 promotes smooth muscle cell proliferation. *J. Biol. Chem.* 277: 6582-6589.

CHROMOSOMAL LOCATION

Genetic locus: SF1 (human) mapping to 11q13.1.

PRODUCT

splicing factor 1 siRNA (h) is a pool of 2 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 splicing factor 1 shRNA Plasmid (h): sc-44115-SH and splicing factor 1 shRNA (h) Lentiviral Particles: sc-44115-V as alternate gene silencing products.

For independent verification of splicing factor 1 (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-44115A and sc-44115B.

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 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

splicing factor 1 siRNA (h) is recommended for the inhibition of splicing factor 1 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 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.

GENE EXPRESSION MONITORING

splicing factor 1 (H-9): sc-398881 is recommended as a control antibody for monitoring of splicing factor 1 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 splicing factor 1 gene expression knockdown using RT-PCR Primer: splicing factor 1 (h)-PR: sc-44115-PR (20 μ l, 589 bp). 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.