

SPF30 siRNA (m): sc-63055

BACKGROUND

SPF30 (survival of motor neuron-related-splicing factor 30), also known as SMNDC1 (survival motor neuron domain containing 1) or SMNR (SMN-related protein), is an essential splicing factor required for spliceosome assembly that belongs to the SMN family. It contains one Tudor domain with significant similarity to SMN (survival motor neuron) and is expressed in skeletal muscle, pancreas and heart, localizing to Cajal bodies and nuclear speckles. SPF30 plays an important role in spliceosome assembly and directly interacts with five U snRNPs. The loss of SPF30 causes spliceosome assembly to arrest at prespliceosomes (A complex). This supports a function for SPF30 in mediating the incorporation/recruitment of U4/U5/U6 tri-snRNP to the prespliceosome. In addition, the overexpression of SPF30 can lead to apoptosis.

REFERENCES

1. Talbot, K., et al. 1998. Characterization of a gene encoding survival motor neuron (SMN)-related protein, a constituent of the spliceosome complex. *Hum. Mol. Genet.* 7: 2149-2156.
2. Neubauer, G., et al. 1998. Mass spectrometry and EST-database searching allows characterization of the multi-protein spliceosome complex. *Nat. Genet.* 20: 46-50.
3. Meister, G., et al. 2001. SMNrp is an essential pre-mRNA splicing factor required for the formation of the mature spliceosome. *EMBO J.* 20: 2304-2314.
4. Rappilber, J., et al. 2001. SPF30 is an essential human splicing factor required for assembly of the U4/U5/U6 tri-small nuclear ribonucleoprotein into the spliceosome. *J. Biol. Chem.* 276: 31142-31150.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603519. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Narayanan, U., et al. 2004. Coupled *in vitro* import of U snRNPs and SMN, the spinal muscular atrophy protein. *Mol. Cell* 16: 223-234.
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CHROMOSOMAL LOCATION

Genetic locus: SmnDC1 (mouse) mapping to 19 D2.

PRODUCT

SPF30 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 SPF30 shRNA Plasmid (m): sc-63055-SH and SPF30 shRNA (m) Lentiviral Particles: sc-63055-V as alternate gene silencing products.

For independent verification of SPF30 (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-63055A, sc-63055B and sc-63055C.

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

SPF30 siRNA (m) is recommended for the inhibition of SPF30 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.

GENE EXPRESSION MONITORING

SPF30 (G-8): sc-376887 is recommended as a control antibody for monitoring of SPF30 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 SPF30 gene expression knockdown using RT-PCR Primer: SPF30 (m)-PR: sc-63055-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.

PROTOCOLS

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