

SMU1 siRNA (m): sc-153642

BACKGROUND

WD-repeats are motifs that are found in a variety of proteins and are characterized by a conserved core of 40-60 amino acids that commonly form a tertiary propeller structure. While proteins that contain WD-repeats participate in a wide range of cellular functions, they are generally involved in regulatory mechanisms concerning chromatin assembly, cell cycle control, signal transduction, RNA processing, apoptosis and vesicular trafficking. SMU1 (suppressor of mec-8 and unc-52 homolog), also known as BWD (brain-enriched WD), is a member of the WD-repeat SMU1 family and contains one CTLH domain, one LisH domain and six WD-repeats. SMU1 is a homolog of the *C. elegans* protein SMU1, a ubiquitously expressed nuclear protein that is believed to play a role in alternative splicing events of unc-52. In mammals, SMU1 is a component of the spliceosome and appears to exhibit a conserved function, affecting the splicing of the mammalian unc-52 homolog, namely Perlecan. Mutations in the gene encoding SMU1 may affect the function of the spliceosome.

REFERENCES

1. Lundquist, E.A. and Herman, R.K. 1994. The mec-8 gene of *Caenorhabditis elegans* affects muscle and sensory neuron function and interacts with three other genes: unc-52, SMU1 and SMU2. *Genetics* 138: 83-101.
2. Di Benedetto, A.J., et al. 2001. Cloning and molecular characterization of a novel gene encoding a WD-repeat protein expressed in restricted areas of adult rat brain. *Gene* 271: 21-31.
3. Spike, C.A., et al. 2001. Analysis of SMU1, a gene that regulates the alternative splicing of UNC-52 pre-mRNA in *Caenorhabditis elegans*. *Mol. Cell. Biol.* 21: 4985-4995.
4. Watts, G.D., et al. 2003. Clinical and genetic heterogeneity in chromosome 9p associated hereditary inclusion body myopathy: exclusion of GNE and three other candidate genes. *Neuromuscul. Disord.* 13: 559-567.
5. Smith, D.G., et al. 2004. An ste20 homologue in *Ustilago maydis* plays a role in mating and pathogenicity. *Eukaryotic Cell* 3: 180-189.
6. Spartz, A.K., et al. 2004. SMU-2 and SMU-1, *Caenorhabditis elegans* homologs of mammalian spliceosome-associated proteins RED and fSAP57, work together to affect splice site choice. *Mol. Cell. Biol.* 24: 6811-6823.

CHROMOSOMAL LOCATION

Genetic locus: Smu1 (mouse) mapping to 4 A5.

PRODUCT

SMU1 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 SMU1 shRNA Plasmid (m): sc-153642-SH and SMU1 shRNA (m) Lentiviral Particles: sc-153642-V as alternate gene silencing products.

For independent verification of SMU1 (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-153642A, sc-153642B and sc-153642C.

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

SMU1 siRNA (m) is recommended for the inhibition of SMU1 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

SMU1 (JS-12): sc-100896 is recommended as a control antibody for monitoring of SMU1 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 SMU1 gene expression knockdown using RT-PCR Primer: SMU1 (m)-PR: sc-153642-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.