

U1 snRNP 70 siRNA (h): sc-36768

BACKGROUND

U1 small nuclear ribonucleoprotein (U1 snRNP 70 or U1 70) is a component of the RNA spliceosome, a complex of proteins that are required for the precise excision of introns from pre-messenger RNA (pre-mRNA). U1 snRNP 70 specifically associates with the single stranded loop of hairpin 1 on U1 snRNA (small nuclear RNA). Like other snRNPs, U1 snRNP 70 contains a single RNA binding domain of 80-90 amino acids that is located within the central portion of the protein, and is both necessary and sufficient for the specific U1 snRNA binding *in vitro*. This interaction, which occurs independently of ATP, is essential for the commitment to the pre-mRNA splicing pathway, as it facilitates the association of other proteins with the spliceosome. U1 snRNP 70 is diffusely localized in the cytoplasm at the onset of mitosis and as mitosis progresses through telophase, U1 snRNP 70 accumulations in the daughter nuclei.

REFERENCES

1. Wieben, E.D., et al. 1983. U1 small nuclear ribonucleoprotein studied by *in vitro* assembly. J. Cell Biol. 96: 1751-1755.
2. Hamm, J., et al. 1987. *In vitro* assembly of U1 snRNPs. EMBO J. 6: 3479-3485.
3. Surowy, C.S., et al. 1989. Direct, sequence-specific binding of the human U1-70K ribonucleoprotein antigen protein to loop I of U1 small nuclear RNA. Mol. Cell. Biol. 9: 4179-4186.
4. Query, C.C., et al. 1989. A specific 31-nucleotide domain of U1 RNA directly interacts with the 70 kDa small nuclear ribonucleoprotein component. Mol. Cell. Biol. 9: 4872-4881.
5. Ferreira, J.A., et al. 1994. Differential interaction of splicing snRNPs with coiled bodies and interchromatin granules during mitosis and assembly of daughter cell nuclei. J. Cell Biol. 126: 11-23.
6. Ihn, H., et al. 1999. Distribution and antigen specificity of anti-U1RNP antibodies in patients with systemic sclerosis. Clin. Exp. Immunol. 117: 383-387.

CHROMOSOMAL LOCATION

Genetic locus: SNRNP70 (human) mapping to 19q13.33.

PRODUCT

U1 snRNP 70 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see U1 snRNP 70 shRNA Plasmid (h): sc-36768-SH and U1 snRNP 70 shRNA (h) Lentiviral Particles: sc-36768-V as alternate gene silencing products.

For independent verification of U1 snRNP 70 (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-36768A, sc-36768B and sc-36768C.

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

U1 snRNP 70 siRNA (h) is recommended for the inhibition of U1 snRNP 70 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

U1 snRNP 70 (C-3): sc-390899 is recommended as a control antibody for monitoring of U1 snRNP 70 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 U1 snRNP 70 gene expression knockdown using RT-PCR Primer: U1 snRNP 70 (h)-PR: sc-36768-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.