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U2 snRNP A siRNA (m): sc-154833

BACKGROUND

Small nuclear ribonucleoproteins, also known as snRNPs, combine with other proteins to form spliceosomes, a complex that catalyzes pre-mRNA splicing. There are two types of spliceosomes: U2 and U12. The U2-type spliceosome is found in all eukaryotes and excises U2-type introns, which account for the majority of pre-mRNA introns. The U12-type spliceosome removes U12-type introns, which comprise less than 1% of all human introns. U2 snRNP A, also known as SNRPA1 or U2A, is a component of the U2 snRNP that forms a complex with U2 snRNP B (U2B). Together, U2 snRNP A and U2 snRNP B form a complex that binds to the U2 snRNA hairpin IV. The configuration of this U2 snRNP A/U2 snRNP B dimer and the subtle variations of a few key residues regulate the snRNP-RNA-binding specificity. U2 snRNP A is a 255 amino acid protein, and two isoforms exist as a result of alternative splicing events.

REFERENCES

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2. Crispino, J.D., et al. 1994. Complementation by SR proteins of pre-mRNA splicing reactions depleted of U1 snRNP. *Science* 265: 1866-1869.
3. Blencowe, B.J., et al. 1998. A coactivator of pre-mRNA splicing. *Genes Dev.* 12: 996-1009.
4. Price, S.R., et al. 1998. Crystal structure of the spliceosomal U2B⁺-U2A' protein complex bound to a fragment of U2 small nuclear RNA. *Nature* 394: 645-650.
5. Eldridge, A.G., et al. 1999. The SRm160/300 splicing coactivator is required for exon-enhancer function. *Proc. Natl. Acad. Sci. USA* 96: 6125-6130.
6. Lundin, M., et al. 2000. Gene structure of the U2 snRNP-specific A' protein gene from *Salmo salar*: alternative transcripts observed. *Mar. Biotechnol.* 2: 204-211.
7. Nagengast, A.A. et al. 2001. The *Drosophila* U2 snRNP protein U2A' has an essential function that is SNF/U2B⁺ independent. *Nucleic Acids Res.* 29: 3841-3847.
8. Jurica, M.S., et al. 2002. Purification and characterization of native spliceosomes suitable for three-dimensional structural analysis. *RNA* 8: 426-439.

CHROMOSOMAL LOCATION

Genetic locus: Snrpa1 (mouse) mapping to 7 C.

PRODUCT

U2 snRNP A siRNA (m) is a target-specific 19-25 nt siRNA 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 U2 snRNP A shRNA Plasmid (m): sc-154833-SH and U2 snRNP A shRNA (m) Lentiviral Particles: sc-154833-V as alternate gene silencing products.

PROTOCOLS

See our web site at www.scbt.com or our catalog 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

U2 snRNP A siRNA (m) is recommended for the inhibition of U2 snRNP A 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

U2 SnRNP A (B-3): sc-393804 is recommended as a control antibody for monitoring of U2 snRNP A 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor U2 snRNP A gene expression knockdown using RT-PCR Primer: U2 snRNP A (m)-PR: sc-154833-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.