SANTA CRUZ BIOTECHNOLOGY, INC.

Sm E siRNA (h): sc-38329

BACKGROUND

U1, U2, U4, U5, U6 and U7 are small nuclear ribonucleoproteins (snRNPs) that comprise the spliceosome in eukaryotes. Each UsnRNP contains common Sm proteins B/B', D1, D2, D3, E, F and G. The Sm proteins pair up as D1-D2, B/B'-D3 and E-F-G to form RNA-free hetero-oligomers in the cytoplasm. Sm proteins aid in the cytoplasmic construction of the UsnRNPs by binding to a conserved Sm site on UsnRNA and forming a stable snRNP core complex. Sm D1, D2 and D3 are present in U1, U2, U4/5 and U5 but not U7 snRNPs in human and mouse cells. U7 snRNPs contain Lsm10, an Sm D1-like protein. Autoantibodies produced in patients suffering from systemic lupus erythematosus react predominantly with Sm B/B', D1 and D3. The major linear epitope of these autoantibodies includes the C-terminal RG dipeptide repeats found in Sm D1 and D3. The gene encoding human Sm E maps to chromosome 1q32.1.

REFERENCES

1. Branlant, C., et al. 1982. U2 RNA shares a structural domain with U1, U4, and U5 RNAs. EMBO J. 1: 1259-1265.
2. Stanford, D.R., et al. 1988. The complete primary structure of the human snRNP E protein. Nucleic Acids Res. 16: 10593-10605.
3. Lehmeier, T., et al. 1990. Evidence for three distinct D proteins, which react differntially with anti-Sm autoantibodies, in the cores of the major snRNPs U1, U2, U4/U6 and U5. Nucleic Acids Res. 18: 6475-6484.
4. Neiswanger, K., et al. 1990. Assignment of the gene for the small nuclear ribonucleoprotein E (SNRPE) to human chromosome 1q25-q43. Genomics 7: 503-508.
5. Raker, V.A., et al. 1996. The snRNP core assembly pathway: identification of stable core protein heteromeric complexes and an snRNP subcore particle *in vitro*. EMBO J. 15: 2256-2269.
6. Brahms, H., et al. 2000. The C-terminal RG dipeptide repeats of the spliceosomal Sm proteins D1 and D3 contain symmetrical dimethyl-arginines, which form a major B cell epitope for anti-Sm autoantibodies. J. Biol. Chem. 275: 17122-17129.

CHROMOSOMAL LOCATION

Genetic locus: SNRPE (human) mapping to 1q32.1.

PRODUCT

Sm E 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Sm E shRNA Plasmid (h): sc-38329-SH and Sm E shRNA (h) Lentiviral Particles: sc-38329-V as alternate gene silencing products.

For independent verification of Sm E (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-38329A, sc-38329B and sc-38329C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Sm E siRNA (h) is recommended for the inhibition of Sm E 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 µM in 66 µl. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sm E gene expression knockdown using RT-PCR Primer: Sm E (h)-PR: sc-38329-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Saito, Y., et al. 2016. Yeast two-hybrid and one-hybrid screenings identify regulators of HSP 70 gene expression. J. Cell. Biochem. 117: 2109-2117.

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.