

LSm6 siRNA (h): sc-75711

BACKGROUND

Sm and Sm-like (LSm) proteins form donut-shaped, ubiquitously expressed heptameric complexes that are involved in various steps of RNA metabolism, including RNA-protein interactions and structural changes that are required during ribosomal subunit assembly. LSm6 is an 80 amino acid protein that localizes to both the nucleus and the cytoplasm and belongs to the LSm sub-family of snRNP Sm proteins. Functioning as a component of the heptameric LSm1-LSm7 complex, LSm6 is involved in mRNA degradation, specifically by activating the decapping step in the 5'-to-3' mRNA decay pathway. Additionally, LSm6 plays a role in facilitating the association of RNA processing factors with their substrates and may also be involved in the processing of tRNAs.

REFERENCES

1. Salgado-Garrido, J., Bragado-Nilsson, E., Kandels-Lewis, S. and Seraphin, B. 1999. Sm and Sm-like proteins assemble in two related complexes of deep evolutionary origin. *EMBO J.* 18: 3451-3462.
2. Achsel, T., Brahms, H., Kastner, B., Bachi, A., Wilm, M. and Lührmann, R. 1999. A doughnut-shaped heteromer of human Sm-like proteins binds to the 3'-end of U6 snRNA, thereby facilitating U4/U6 duplex formation *in vitro*. *EMBO J.* 18: 5789-5802.
3. Friesen, W.J. and Dreyfuss, G. 2000. Specific sequences of the Sm and Sm-like (LSm) proteins mediate their interaction with the spinal muscular atrophy disease gene product (SMN). *J. Biol. Chem.* 275: 26370-26375.
4. Ingelfinger, D., Arndt-Jovin, D.J., Lührmann, R. and Achsel, T. 2002. The human LSm1-7 proteins colocalize with the mRNA-degrading enzymes Dcp1/2 and Xrn1 in distinct cytoplasmic foci. *RNA* 8: 1489-1501.
5. Lehner, B. and Sanderson, C.M. 2004. A protein interaction framework for human mRNA degradation. *Genome Res.* 14: 1315-1323.
6. Kittler, R., Putz, G., Pelletier, L., Poser, I., Heninger, A.K., Drechsel, D., Fischer, S., Konstantinova, I., Habermann, B., Grabner, H., Yaspo, M.L., Himmelbauer, H., Korn, B., Neugebauer, K., Pisabarro, M.T. and Buchholz, F. 2004. An endoribonuclease-prepared siRNA screen in hu 2004. An endoribonuclease-prepared siRNA screen in human cells identifies genes essential for cell division. *Nature* 432: 1036-1040.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 607286. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: LSM6 (human) mapping to 4q31.22.

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.

PRODUCT

LSm6 siRNA (h) is a pool of 2 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 LSm6 shRNA Plasmid (h): sc-75711-SH and LSm6 shRNA (h) Lentiviral Particles: sc-75711-V as alternate gene silencing products.

For independent verification of LSm6 (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-75711A and sc-75711B.

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

LSm6 siRNA (h) is recommended for the inhibition of LSm6 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LSm6 gene expression knockdown using RT-PCR Primer: LSm6 (h)-PR: sc-75711-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.