SANTA CRUZ BIOTECHNOLOGY, INC.

EXOSC2 siRNA (m): sc-144975

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The Power to Question

BACKGROUND

The exosome is a multisubunit complex of 3' to 5' exoribonucleases. It is involved in a variety of cellular processes and is responsible for degrading unstable mRNAs that contain AU-rich elements in their untranslated 3' region. EXOSC2 (exosome component 2), also known as p7, RRP4 (Ribosomal RNA-processing protein 4), hRrp4p or Rrp4p, is a component of the exosome multienzyme ribonuclease complex. It contains one S1 RNA-binding domain and localizes to the cytoplasm and nucleolus. In humans, EXOSC2 is phosphorylated within the S1 RNA-binding domain at serine residue 124. This phosphorylation site is conserved from yeast to human implying that it is of great importance in the cell. EXOSC2 is one of the four exosome subunits known to have exoribonuclease activity. It is required for the processing of the 7S pre-RNA.

REFERENCES

1. Mitchell, P., Petfalski, E. and Tollervey, D. 1996. The .end of yeast 5.8S rRNA is generated by an exonuclease processing mechanism. Genes Dev. 10: 502-513.
2. Mitchell, P., Petfalski, E., Shevchenko, A., Mann, M. and Tollervey, D. 1997. The exosome: a conserved eukaryotic RNA processing complex containing multiple 3'→5' exoribonucleases. Cell 91: 457-466.
3. Chen, C.Y., Gherzi, R., Ong, S.E., Chan, E.L., Raijmakers, R., Pruijn, G.J., Stoecklin, G., Moroni, C., Mann, M. and Karin, M. 2001. AU binding proteins recruit the exosome to degrade ARE-containing mRNAs. Cell 107: 451-464.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602238. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Evguenieva-Hackenberg, E., Walter, P., Hochleitner, E., Lottspeich, F. and Klug, G. 2003. An exosome-like complex in *Sulfolobus* solfataricus. EMBO Rep. 4: 889-893.
6. Walter, P., Klein, F., Lorentzen, E., Ilchmann, A., Klug, G. and Evguenieva-Hackenberg, E. 2006. Characterization of native and reconstituted exosome complexes from the hyperthermophilic archaeon *Sulfolobus* solfataricus. Mol. Microbiol. 62: 1076-1089.
7. Synowsky, S.A., van den Heuvel, R.H., Mohammed, S., Pijnappel, P.W. and Heck, A.J. 2006. Probing genuine strong interactions and post-translational modifications in the heterogeneous yeast exosome protein complex. Mol. Cell. Proteomics 5: 1581-1592.
8. Oddone, A., Lorentzen, E., Basquin, J., Gasch, A., Rybin, V., Conti, E. and Sattler, M. 2007. Structural and biochemical characterization of the yeast exosome component Rrp40. EMBO Rep. 8: 63-69.
9. Lorentzen, E., Dziembowski, A., Lindner, D., Seraphin, B. and Conti, E. 2007. RNA channelling by the archaeal exosome. EMBO Rep. 8: 470-476.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: Exosc2 (mouse) mapping to 2 B.

PRODUCT

EXOSC2 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EXOSC2 shRNA Plasmid (m): sc-144975-SH and EXOSC2 shRNA (m) Lentiviral Particles: sc-144975-V as alternate gene silencing products.

For independent verification of EXOSC2 (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-144975A and sc-144975B.

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

EXOSC2 siRNA (m) is recommended for the inhibition of EXOSC2 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 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 EXOSC2 gene expression knockdown using RT-PCR Primer: EXOSC2 (m)-PR: sc-144975-PR (20 µl). 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.