SANTA CRUZ BIOTECHNOLOGY, INC.

Nop56 siRNA (h): sc-106309

BACKGROUND

Nop1p (nucleolar protein 1) is a phylogenetically conserved protein essential for efficient processing of pre-rRNA through its association with a class of small nucleolar RNAs during ribosomal biogenesis. Small nucleolar RNAs (snoRNAs) are associated in ribonucleoprotein particles localized to the nucleolus (snoRNPs). Nop1p is structurally and functionally homologous to vertebrate fibrillarin and is essential for viability. The *Saccharomyces cerevisiae* NOP1 gene encodes a protein resembling the dense fibrillar region of mammalian nucleoli. Nop5p functions with Nop1p in the execution of early pre-rRNA processing steps that lead to formation of 18 S rRNA. In Archaea, fibrillarin and Nop5p comprise the core complex of box C/D snoRNAs, which are responsible for site-specific 2'-hydroxyl methylation of ribosomal and transfer RNAs. Nop56p is a component of the box C/D small nucleolar ribonucleoprotein complexes that direct 2'-O-methylation of pre-rRNA during its maturation.

REFERENCES

1. Gautier, T., et al. 1997. Nucleolar KKE/D repeat proteins Nop56p and Nop58p interact with Nop1p and are required for ribosome biogenesis. Mol. Cell Biol. 17: 7088-7098.
2. Lafontaine, D.L., et al. 2000. Synthesis and assembly of the box C+D small nucleolar RNPs. Mol. Cell. Biol. 20: 2650-2659.
3. Nelson, S.A., et al. 2000. Multiple growth factor induction of a murine early response gene that complements a lethal defect in yeast ribosome biogenesis. J. Biol. Chem. 275: 13835-13841.
4. Verheggen, C., et al. 2001. Box C/D small nucleolar RNA trafficking involves small nucleolar RNP proteins, nucleolar factors and a novel nuclear domain. EMBO J. 20: 5480-5490.
5. Aittaleb, M., et al. 2003. Structure and function of archaeal box C/D sRNP core proteins. Nat. Struct. Biol. 10: 256-263.
6. Hayano, T., et al. 2003. Proteomic analysis of human Nop56p-associated pre-ribosomal ribonucleoprotein complexes. Possible link between Nop56p and the nucleolar protein treacle responsible for Treacher Collins syndrome. J. Biol. Chem. 278: 34309-34319.

CHROMOSOMAL LOCATION

Genetic locus: NOP56 (human) mapping to 20p13.

PRODUCT

Nop56 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 Nop56 shRNA Plasmid (h): sc-106309-SH and Nop56 shRNA (h) Lentiviral Particles: sc-106309-V as alternate gene silencing products.

For independent verification of Nop56 (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-106309A, sc-106309B and sc-106309C.

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

Nop56 siRNA (h) is recommended for the inhibition of Nop56 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 Nop56 gene expression knockdown using RT-PCR Primer: Nop56 (h)-PR: sc-106309-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.

PROTOCOLS

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