



POLR3H siRNA (h): sc-76194

BACKGROUND

Eukaryotes produce 3 distinct classes of RNA polymerase, Pol I, II and III. Each polymerase is responsible for the synthesis of a different class of RNA. RNA polymerase III (Pol III) transcribes the 5S rRNA genes and all of the tRNA (transfer RNA) genes. POLR3H (DNA-directed RNA polymerase III subunit H), also known as DNA-directed RNA polymerase III subunit RPC8, is a 204 amino acid nuclear protein that is one of the seventeen subunits that comprise Pol III. Using the four ribonucleoside triphosphates as substrates, POLR3H catalyzes the transcription of DNA into RNA. A possible Pol III subcomplex is formed via the interaction between POLR3H and CGRP-RCP. There are two isoforms of POLR3H that are produced as a result of alternative splicing events.

REFERENCES

1. Willis, I.M. 1993. RNA polymerase III. Genes, factors and transcriptional specificity. *Eur. J. Biochem.* 212: 1-11.
2. Buratowski, S. 1994. RNA polymerase III transcription in the yeast *Saccharomyces cerevisiae*. *Genet. Eng.* 16: 1-9.
3. Bardeleben, C., et al. 1994. Encounters of *Saccharomyces cerevisiae* RNA polymerase III with its transcription factors during RNA chain elongation. *J. Mol. Biol.* 235: 1193-1205.
4. Evans, B.N., et al. 2000. CGRP-RCP, a novel protein required for signal transduction at calcitonin gene-related peptide and adrenomedullin receptors. *J. Biol. Chem.* 275: 31438-31443.
5. Hirosawa, M., et al. 2001. Identification of novel transcribed sequences on human chromosome 22 by expressed sequence tag mapping. *DNA Res.* 8: 1-9.
6. Hu, P., et al. 2002. Characterization of human RNA polymerase III identifies orthologues for *Saccharomyces cerevisiae* RNA polymerase III subunits. *Mol. Cell. Biol.* 22: 8044-8055.
7. Saut, M., et al. 2003. An Rpb4/Rpb7-like complex in yeast RNA polymerase III contains the orthologue of mammalian CGRP-RCP. *Mol. Cell. Biol.* 23: 195-205.

CHROMOSOMAL LOCATION

Genetic locus: POLR3H (human) mapping to 22q13.2.

PRODUCT

POLR3H 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see POLR3H shRNA Plasmid (h): sc-76194-SH and POLR3H shRNA (h) Lentiviral Particles: sc-76194-V as alternate gene silencing products.

For independent verification of POLR3H (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-76194A, sc-76194B and sc-76194C.

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

POLR3H siRNA (h) is recommended for the inhibition of POLR3H 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 POLR3H gene expression knockdown using RT-PCR Primer: POLR3H (h)-PR: sc-76194-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.

PROTOCOLS

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