

POLR2I siRNA (h): sc-97881

BACKGROUND

RNA polymerase II (Pol II) is a multi-subunit enzyme responsible for the transcription of protein-coding genes. Transcription initiation requires recruitment of the complete transcription machinery to a promoter via solicitation by activators and chromatin remodeling factors. Pol II can coordinate 10 to 14 subunits. This complex interacts with the promoter regions of genes and a variety of elements and transcription factors. POLR2I (polymerase (RNA) II (DNA directed) polypeptide I), also known as RPB9 or hRPB14.5, is a 125 amino acid nuclear protein belonging to the archaeal rpoM/eukaryotic RPA12/RPB9/RPC11 RNA polymerase family. Component of RNA polymerase II, POLR2I catalyzes the transcription of DNA into RNA using the four ribonucleoside triphosphates as substrates. POLR2I is part of the upper jaw surrounding the central large cleft and is thought to grab the incoming DNA template.

REFERENCES

1. Acker, J., et al. 1993. Structure of the gene encoding the 14.5 kDa subunit of human RNA polymerase II. *Nucleic Acids Res.* 21: 5345-5350.
2. Acker, J., et al. 1994. Chromosomal localization of human RNA polymerase II subunit genes. *Genomics* 20: 496-499.
3. Online Mendelian Inheritance in Man, OMIM[™]. 1994. Johns Hopkins University, Baltimore, MD. MIM Number: 180662. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. McKune, K., et al. 1995. Six human RNA polymerase subunits functionally substitute for their yeast counterparts. *Mol. Cell. Biol.* 15: 6895-6900.
5. Bushnell, D.A., et al. 2004. Structural basis of transcription: an RNA polymerase II-TFIIB cocrystal at 4.5 Angstroms. *Science* 303: 983-988.
6. Palangat, M., et al. 2004. Downstream DNA selectively affects a paused conformation of human RNA polymerase II. *J. Mol. Biol.* 341: 429-442.
7. Zhong, S., et al. 2004. Epidermal growth factor enhances cellular TATA binding protein levels and induces RNA polymerase I- and III-dependent gene activity. *Mol. Cell. Biol.* 24: 5119-5129.

CHROMOSOMAL LOCATION

Genetic locus: POLR2I (human) mapping to 19q13.12.

PRODUCT

POLR2I siRNA (h) is a target-specific 19-25 nt siRNA 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 POLR2I shRNA Plasmid (h): sc-97881-SH and POLR2I shRNA (h) Lentiviral Particles: sc-97881-V as alternate gene silencing products.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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

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

POLR2I siRNA (h) is recommended for the inhibition of POLR2I 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 60 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.

GENE EXPRESSION MONITORING

POLR2I (F-11): sc-398049 is recommended as a control antibody for monitoring of POLR2I gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker[™] compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor POLR2I gene expression knockdown using RT-PCR Primer: POLR2I (h)-PR: sc-97881-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.