

POLR3D siRNA (h): sc-77815

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. POLR3D, also known as DNA-directed RNA polymerase III subunit RPC4 and Protein BN51, is a 398 amino acid nuclear protein that is one of the seventeen subunits that comprise Pol III. Specifically, POLR3D is a DNA-dependent RNA polymerase that uses the four ribonucleoside triphosphates to catalyze the transcription of DNA to RNA. The gene encoding POLR3D maps to human chromosome 8, which is made up of nearly 146 million bases and encodes about 800 genes.

REFERENCES

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4. Jackson, A.J., et al. 1995. The BN51 protein is a polymerase (Pol)-specific subunit of RNA Pol III which reveals a link between Pol III transcription and pre-rRNA processing. *Mol. Cell. Biol.* 15: 94-101.
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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. Nikitina, T.V. and Tishchenko, L.I. 2005. RNA polymerase III transcription apparatus: structure and transcription regulation. *Mol. Biol.* 39: 179-192.

CHROMOSOMAL LOCATION

Genetic locus: POLR3D (human) mapping to 8p21.3.

PRODUCT

POLR3D 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 POLR3D shRNA Plasmid (h): sc-77815-SH and POLR3D shRNA (h) Lentiviral Particles: sc-77815-V as alternate gene silencing products.

For independent verification of POLR3D (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-77815A, sc-77815B and sc-77815C.

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

POLR3D siRNA (h) is recommended for the inhibition of POLR3D 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 POLR3D gene expression knockdown using RT-PCR Primer: POLR3D (h)-PR: sc-77815-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.