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RPAP1 siRNA (m): sc-153097

BACKGROUND

RNA polymerases transcribe nuclear genes for ribosomal RNA and are integral components of ribosomal biogenesis. RNA polymerase I (Pol I) is located in the nucleolus and transcribes class I genes, which code for large ribosomal RNA. RNA polymerase II (Pol II) synthesizes mRNA. RNA polymerase III (Pol III) transcribes class III genes, encoding a number of small ribosomal RNA molecules including tRNA and 5S rRNA. RPAP1 (RNA polymerase II associated protein 1) is a 1,393 amino acid nuclear protein that is thought to connect Pol II to acetylated Histone H3 and regulators of protein complex formation. A member of the RPAP1 family, RPAP1 exists as three alternatively spliced isoforms that are encoded by a gene that maps to human chromosome 15q15.1.

REFERENCES

- Comai, L. 2004. Mechanism of RNA polymerase I transcription. *Adv. Protein Chem.* 67: 123-155.
- Palangat, M., Hittinger, C.T. and Landick, R. 2004. Downstream DNA selectively affects a paused conformation of human RNA polymerase II. *J. Mol. Biol.* 341: 429-442.
- Zhong, S., Zhang, C. and Johnson, D.L. 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.
- Hirsch, H.A., Jawdekar, G.W., Lee, K.A., Gu, L. and Henry, R.W. 2004. Distinct mechanisms for repression of RNA polymerase III transcription by the retinoblastoma tumor suppressor protein. *Mol. Cell. Biol.* 24: 5989-5999.

CHROMOSOMAL LOCATION

Genetic locus: Rpap1 (mouse) mapping to 2 E5.

PRODUCT

RPAP1 siRNA (m) 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 RPAP1 shRNA Plasmid (m): sc-153097-SH and RPAP1 shRNA (m) Lentiviral Particles: sc-153097-V as alternate gene silencing products.

For independent verification of RPAP1 (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-153097A, sc-153097B and sc-153097C.

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

RPAP1 siRNA (m) is recommended for the inhibition of RPAP1 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 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 RPAP1 gene expression knockdown using RT-PCR Primer: RPAP1 (m)-PR: sc-153097-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.