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- Expressversand

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# POLR1E siRNA (m): sc-152370

## BACKGROUND

RNA polymerase I (Pol I) is a multi-subunit complex responsible for catalyzing the transcription of DNA into RNA, specifically via the synthesis of ribosomal RNA precursors. POLR1E (polymerase (RNA) I polypeptide E), also known as PAF53 or PRAF1, is a 481 amino acid protein that localizes to the nucleolus and belongs to the eukaryotic RPA49/POLR1E RNA polymerase subunit family. Existing as a component of the Pol I complex, POLR1E functions as a DNA-dependent RNA polymerase that uses the four ribonucleoside triphosphates as substrates to catalyze the transcription of DNA into RNA. The gene encoding POLR1E maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome. Hereditary hemorrhagic telangiectasia, which is characterized by harmful vascular defects, and Familial dysautonomia, are both associated with chromosome 9. Notably, chromosome 9 encompasses the largest interferon family gene cluster.

## REFERENCES

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- Voit, R. and Grummt, I. 2001. Phosphorylation of UBF at serine 388 is required for interaction with RNA polymerase I and activation of rDNA transcription. *Proc. Natl. Acad. Sci. USA* 98: 13631-13636.
- Bjerregaard, B., Wrenzycki, C., Philimonenko, V.V., Hozak, P., Laurincik, J., Niemann, H., Motlik, J. and Maddox-Hyttel, P. 2004. Regulation of ribosomal RNA synthesis during the final phases of porcine oocyte growth. *Biol. Reprod.* 70: 925-935.
- Yamamoto, K., Yamamoto, M., Hanada, K., Nogi, Y., Matsuyama, T. and Muramatsu, M. 2004. Multiple protein-protein interactions by RNA polymerase I-associated factor PAF49 and role of PAF49 in rRNA transcription. *Mol. Cell. Biol.* 24: 6338-6349.
- Percipalle, P., Fomproix, N., Cavellán, E., Voit, R., Reimer, G., Krüger, T., Thyberg, J., Scheer, U., Grummt, I. and Farrants, A.K. 2006. The chromatin remodelling complex WSTF-SNF2h interacts with nuclear myosin 1 and has a role in RNA polymerase I transcription. *EMBO Rep.* 7: 525-530.

## CHROMOSOMAL LOCATION

Genetic locus: Polr1e (mouse) mapping to 4 B1.

## PRODUCT

POLR1E 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see POLR1E shRNA Plasmid (m): sc-152370-SH and POLR1E shRNA (m) Lentiviral Particles: sc-152370-V as alternate gene silencing products.

For independent verification of POLR1E (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-152370A, sc-152370B and sc-152370C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

POLR1E siRNA (m) is recommended for the inhibition of POLR1E 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  $\mu$ M in 66  $\mu$ 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

POLR1E (C-11): sc-398270 is recommended as a control antibody for monitoring of POLR1E 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 reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor POLR1E gene expression knockdown using RT-PCR Primer: POLR1E (m)-PR: sc-152370-PR (20  $\mu$ 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](http://www.scbt.com) for detailed protocols and support products.