

TFII-I siRNA (h): sc-36643

BACKGROUND

Initiation of transcription of eukaryotic genes requires the association of large multimeric protein complexes that involve RNA polymerase II and a variety of basal transcription factors, including members of the TFII protein family. TFII proteins complex with Pol II and initiate transcription by binding to the core promoter elements, such as TATA box sequences, that are located upstream of the transcription start codon. A member of the TFII family, TFII-I is regulated by tyrosine phosphorylation, and it is involved in the initiation of transcription of TATA-less promoters and in cell type specific transcription. TFII-I directly associates with several promoters elements, including TATA box, pyrimidine-rich initiator (Inr) and E-box elements. TFII-I is also implicated in activating transcription of the transcription factor c-Fos, a downstream effector protein in the MAP kinase-signaling pathway. TFII-I binds to several initiation sites within the c-Fos promoter, and it is phosphorylated in response to Map kinase activation, which then enhances TFII-I induced expression of c-Fos.

REFERENCES

1. Conaway, R.C., et al. 1989. An RNA polymerase II transcription factor has an associated DNA-dependent ATPase (dATPase) activity strongly stimulated by the TATA region of promoters. *Proc. Natl. Acad. Sci. USA* 86: 7356-7360.
2. Roy, A.L., et al. 1993. An alternative pathway for transcription initiation involving TFII-I. *Nature* 365: 355-359.

CHROMOSOMAL LOCATION

Genetic locus: GTF2I (human) mapping to 7q11.23.

PRODUCT

TFII-I 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 TFII-I shRNA Plasmid (h): sc-36643-SH and TFII-I shRNA (h) Lentiviral Particles: sc-36643-V as alternate gene silencing products.

For independent verification of TFII-I (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-36643A, sc-36643B and sc-36643C.

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

TFII-I siRNA (h) is recommended for the inhibition of TFII-I 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.

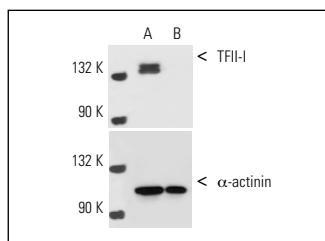
GENE EXPRESSION MONITORING

TFII-I (B-7): sc-46670 is recommended as a control antibody for monitoring of TFII-I 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TFII-I gene expression knockdown using RT-PCR Primer: TFII-I (h)-PR: sc-36643-PR (20 μ l, 528 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



TFII-I siRNA (h): sc-36643. Western blot analysis of TFII-I expression in non-transfected control (A) and TFII-I siRNA transfected (B) HeLa cells. Blot probed with TFII-I (V-18): sc-9943. α -actinin (H-2): sc-17829 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Cetkovská, K., et al. 2015. A novel interaction between TFII-I and Mdm2 with a negative effect on TFII-I transcriptional activity. *PLoS ONE* 10: e0144753.

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.