

TCEAL1 siRNA (h): sc-91043

BACKGROUND

TCEAL1 (transcription elongation factor A (SII) protein 3), also known as p21, SIIR or pp21, is a member of the TFS-II family. Transcription elongation factors of the TFS-II family are responsible for releasing RNA polymerase II (Pol II) from transcriptional arrest. DNA arresting sites can result in locked ternary complexes if elongating RNA polymerases are trapped. Transcription elongation factors function to activate the intrinsic RNA cleavage activity of RNA polymerases. This allows the RNA polymerase to cleave the nascent transcript, thereby forming a new 3'-terminus to resume elongation. TCEAL1 is a 157 amino acid nuclear protein that is ubiquitously expressed. TCEAL1 may exert its effects via protein-protein interactions with other transcriptional regulators rather than via direct binding of DNA. Phosphorylation of TCEAL1 on Ser 36 and Ser 37 is critical for transcriptional repression.

REFERENCES

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2. Yeh, C.H., et al. 1994. Down-regulation of Rous sarcoma virus long terminal repeat promoter activity by a HeLa cell basic protein. *Proc. Natl. Acad. Sci. USA* 91: 11002-11006.
3. Gu, W., et al. 1995. Variation in the size of nascent RNA cleavage products as a function of transcript length and elongation competence. *J. Biol. Chem.* 270: 30441-30447.
4. Labhart, P., et al. 1998. Identification of novel genes encoding transcription elongation factor TFIS (TCEA) in vertebrates: conservation of three distinct TFIS isoforms in frog, mouse, and human. *Genomics* 52: 278-288.
5. Pillutla, R.C., et al. 1999. Genomic structure and chromosomal localization of TCEAL1, a human gene encoding the nuclear phosphoprotein p21/SIIR. *Genomics* 56: 217-220.
6. Wind, M., et al. 2000. Transcription elongation factor SII. *Bioessays* 22: 327-336.
7. Kim, Y.B., et al. 2000. Mechanism of cell cycle arrest caused by histone deacetylase inhibitors in human carcinoma cells. *J. Antibiot.* 53: 1191-1200.

CHROMOSOMAL LOCATION

Genetic locus: TCEAL1 (human) mapping to Xq22.2.

PRODUCT

TCEAL1 siRNA (h) is a pool of 2 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 TCEAL1 shRNA Plasmid (h): sc-91043-SH and TCEAL1 shRNA (h) Lentiviral Particles: sc-91043-V as alternate gene silencing products.

For independent verification of TCEAL1 (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-91043A and sc-91043B.

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

TCEAL1 siRNA (h) is recommended for the inhibition of TCEAL1 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

TCEAL1 (F-4): sc-393621 is recommended as a control antibody for monitoring of TCEAL1 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 κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor TCEAL1 gene expression knockdown using RT-PCR Primer: TCEAL1 (h)-PR: sc-91043-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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