SANTA CRUZ BIOTECHNOLOGY, INC.

TFIIE-β siRNA (m): sc-36649

BACKGROUND

In eukaryotic systems, initiation of transcription from protein-coding genes is a complex process requiring RNA polymerase II and broad families of auxiliary transcription factors. Such factors can be divided into two major functional classes: the basal factors that are required for transcription of all Pol II genes, including TFIIA, TFIIB, TFIID, TFIIE, TFIIF and TFIIH; and sequence-specific factors that regulate gene expression. The basal transcription factors and Pol II form a specific multiprotein complex near the transcription start site by interacting with core promotor elements such as the TATA box generally located 25-30 base pairs upstream of the transcription start site. Human TFIIE consists of two subunits, α and β. The structure of TFIIE appears to be a heterotetramer (α2β2); both subunits are required for optimal basal-level transcription.

REFERENCES

1. Maldonado, E., et al. 1990. Factors involved in specific transcription by mammalian RNA polymerase II: role of transcription factors IIA, IID, and IIB during formation of a transcription-competent complex. Mol. Cell. Biol. 10: 6335-6347.
2. Peterson, M.G., et al. 1990. Functional domains and upstream activation properties of cloned human TATA binding protein. Science 248: 1625-1630.
3. Peterson, M.G., et al. 1991. Structure and functional properties of human general transcription factor IIE. Nature 354: 369-373.
4. Ohkuma, Y., et al. 1991. Structural motifs and potential s homologies in the large subunit of human general transcription factor TFIIE. Nature 354: 398-400.
5. Sumimoto, H., et al. 1991. Conserved sequence motifs in the small subunit of human general transcription factor TFIIE. Nature 354: 401-404.
6. Lee, D.K., et al. 1992. TFIIA induces conformational changes in TFIID via interactions with the basic repeat. Mol. Cell. Biol. 12: 5189-5196.
7. Takada, R., et al. 1992. Identification of human TFIID components and direct interaction between a 250-kDa polypeptide and the TATA box-binding protein (TFIIDτ). Proc. Natl. Acad. Sci. USA 89: 11809-11813.

CHROMOSOMAL LOCATION

Genetic locus: Gtf2e2 (mouse) mapping to 8 A4.

PRODUCT

TFIIE-β 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see TFIIE-β shRNA Plasmid (m): sc-36649-SH and TFIIE-β shRNA (m) Lentiviral Particles: sc-36649-V as alternate gene silencing products.

For independent verification of TFIIE-β (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-36649A, sc-36649B and sc-36649C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

TFIIE-β siRNA (m) is recommended for the inhibition of TFIIE-β 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 µM in 66 µl. 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

TFIIE-β (A-1): sc-137000 is recommended as a control antibody for monitoring of TFIIE-β 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 TFIIE-β gene expression knockdown using RT-PCR Primer: TFIIE-β (m)-PR: sc-36649-PR (20 µl). 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.