SANTA CRUZ BIOTECHNOLOGY, INC.

Supt4h2 siRNA (m): sc-38439

BACKGROUND

SPT4 (also designated Suppressor of Ty4, p14 or SUPT4H1) and SPT5 (also designated DSIF p160) are highly conserved proteins from yeast to humans. Nuclear SPT4 and SPT5 are involved in both DRB (5,6-dichloro-1-β-D-ribofuranosylbenzimidazole)-mediated transcriptional inhibition, as well as the activation of transcriptional elongation by the HIV-1 protein Tat. SPT4 binds SPT5 to form the DSIF (DRB-sensitivity-inducing factor) complex, which binds RNA polymerase II and directly regulates elongation. In mitotic HeLa cells, SPT5 migrates more slowly on SDS-PAGE than does SPT5 isolated from interphase cells, as a result of enhanced SPT5 phosphorylation. The C-terminal CTR1 domain of SPT5 is the substrate for P-TEFb phosphorylation, which is critical for SPT5 function as a regulator of transcriptional elongation. Supt4h2, also known as Gm3258 or Supt4h1b, is a 117 amino acid murine protein that, like SPT4, is a component of the DSIF complex and plays a role in mRNA processing and transcription elongation.

REFERENCES

1. Chiang, P.W., et al. 1996. Isolation and characterization of the human and mouse homologues (SUPT4H and Supt4h) of the yeast SPT4 gene. Genomics 34: 368-375.
2. Hartzog, G.A., et al. 1996. Identification and analysis of a functional human homolog of the SPT4 gene of *Saccharomyces cerevisiae*. Mol. Cell. Biol. 16: 2848-2856.
3. Wada, T., et al. 1998. Evidence that P-TEFb alleviates the negative effect of DSIF on RNA polymerase II-dependent transcription *in vitro*. EMBO J. 17: 7395-7403.
4. Wada, T., et al. 1998. DSIF, a novel transcription elongation factor that regulates RNA polymerase II processivity, is composed of human SPT4 and SPT5 homologs. Genes Dev. 12: 343-356.
5. Yamaguchi, Y., et al. 1999. Structure and function of the human transcription elongation factor DSIF. J. Biol. Chem. 274: 8085-8092.
6. Ivanov, D., et al. 2000. Domains in the SPT5 protein that modulate its transcriptional regulatory properties. Mol. Cell. Biol. 20: 2970-2983.

CHROMOSOMAL LOCATION

Genetic locus: Gm3258 (mouse) mapping to 10 C1.

PRODUCT

Supt4h2 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Supt4h2 shRNA Plasmid (m): sc-38439-SH and Supt4h2 shRNA (m) Lentiviral Particles: sc-38439-V as alternate gene silencing products.

For independent verification of Supt4h2 (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-38439A and sc-38439B.

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

Supt4h2 siRNA (m) is recommended for the inhibition of Supt4h2 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.

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.