



THAP7 siRNA (h): sc-76651

BACKGROUND

THAP7 (THAP domain-containing protein 7) is a 309 amino acid protein belonging to the Thanatos-associated protein family. Ubiquitously expressed, with highest expression in testis, THAP7 contains one THAP domain, an approximately 90 amino acid residue domain which includes a C2CH signature, an AVPTIF box and several other conserved amino acids. In the nucleus, THAP7 associates with chromatin and binds preferentially to hypoacetylated (un-, mono- and diacetylated) histones H3 and H4 through the C-terminal tail. In addition, THAP7 represses transcription by recruiting HDAC3 and N-CoR to promoters to deacetylate histone H3. The gene encoding human THAP7 is localized to chromosome 22q11.21.

REFERENCES

1. Jones, P.L. and Shi, Y.B. 2003. N-CoR-HDAC corepressor complexes: roles in transcriptional regulation by nuclear hormone receptors. *Curr. Top. Microbiol. Immunol.* 274: 237-268.
2. Roussigne, M., et al. 2003. The THAP domain: a novel protein motif with similarity to the DNA-binding domain of P element transposase. *Trends Biochem. Sci.* 28: 66-69.
3. Macfarlan, T., et al. 2005. Human THAP7 is a chromatin-associated, histone tail-binding protein that represses transcription via recruitment of HDAC3 and nuclear hormone receptor corepressor. *J. Biol. Chem.* 280: 7346-7358.
4. Clouaire, T., et al. 2005. The THAP domain of THAP1 is a large C2CH module with zinc-dependent sequence-specific DNA-binding activity. *Proc. Natl. Acad. Sci. USA* 102: 6907-6912.
5. Macfarlan, T., et al. 2006. Thanatos-associated protein 7 associates with template activating factor-1 β and inhibits histone acetylation to repress transcription. *Mol. Endocrinol.* 20: 335-347.
6. Matsuo, H., et al. 2007. Disruption of HDAC4/N-CoR complex by histone deacetylase inhibitors leads to inhibition of IL-2 gene expression. *Biochem. Pharmacol.* 74: 465-476.
7. Miele, A., et al. 2007. The interactome of the histone gene regulatory factor HiNF-P suggests novel cell cycle related roles in transcriptional control and RNA processing. *J. Cell. Biochem.* 102: 136-148.

CHROMOSOMAL LOCATION

Genetic locus: THAP7 (human) mapping to 22q11.21.

PRODUCT

THAP7 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 THAP7 shRNA Plasmid (h): sc-76651-SH and THAP7 shRNA (h) Lentiviral Particles: sc-76651-V as alternate gene silencing products.

For independent verification of THAP7 (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-76651A, sc-76651B and sc-76651C.

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

THAP7 siRNA (h) is recommended for the inhibition of THAP7 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

THAP7 (F-7): sc-515496 is recommended as a control antibody for monitoring of THAP7 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 THAP7 gene expression knockdown using RT-PCR Primer: THAP7 (h)-PR: sc-76651-PR (20 μ 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 for detailed protocols and support products.