SANTA CRUZ BIOTECHNOLOGY, INC.

THOC1 siRNA (m): sc-76653

BACKGROUND

THOC1 (THO complex subunit 1), also known as Tho1, P84, HPR1 or P84N5, is a 657 amino acid nuclear matrix protein and is evolutionarily conserved from yeast to humans. THOC1 contains one death domain and is a component of the heteromultimeric THO/TREX (transcription/export) complex along with THOC2, THOC3, BAT1 and ALY. The THO/TREX complex is recruited to transcribed genes and travels along with RNA polymerase II (Pol II) during elongation, coupling elongating Pol II with RNA splicing and export factors. THOC1 is expressed at high levels in breast cancer cells and at relatively low levels in normal epithelia. A reduction of THOC1 in cancer cell lines results in reduced cell proliferation. This suggests that cancer cells are dependent on the high levels of THOC1 expression and therefore THOC1 may be a good target for cancer therapy.

REFERENCES

1. Durfee, T., et al. 1994. The amino-terminal region of the retinoblastoma gene product binds a novel nuclear matrix protein that co-localizes to centers for RNA processing. J. Cell Biol. 127: 609-622.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606930. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Strässer, K., et al. 2002. TREX is a conserved complex coupling transcription with messenger RNA export. Nature 417: 304-308.
4. Li, Y., et al. 2005. Human hHpr1/p84/THOC1 regulates transcriptional elongation and physically links RNA polymerase II and RNA processing factors. Mol. Cell. Biol. 25: 4023-4033.
5. Wang, X., et al. 2006. THOC1/Hpr1/p84 is essential for early embryonic development in the mouse. Mol. Cell. Biol. 26: 4362-4367.
6. Yin, S., et al. 2006. Combination gene therapy with p53 and THOC1/p84 is more effective than either single agent in an animal model of human pancreatic adenocarcinoma. Int. J. Oncol. 28: 781-785.
7. Li, Y., et al. 2007. Cancer cells and normal cells differ in their requirements for THOC1. Cancer Res. 67: 6657-6664.
8. Wang, X., et al. 2007. An allelic series for studying the mouse Thoc1 gene. Genesis 45: 32-37.

CHROMOSOMAL LOCATION

Genetic locus: Thoc1 (mouse) mapping to 18 A1.

PRODUCT

THOC1 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 THOC1 shRNA Plasmid (m): sc-76653-SH and THOC1 shRNA (m) Lentiviral Particles: sc-76653-V as alternate gene silencing products.

For independent verification of THOC1 (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-76653A, sc-76653B and sc-76653C.

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

THOC1 siRNA (m) is recommended for the inhibition of THOC1 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

THOC1 (E-10): sc-514123 is recommended as a control antibody for monitoring of THOC1 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 THOC1 gene expression knockdown using RT-PCR Primer: THOC1 (m)-PR: sc-76653-PR (20 µl). 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.