

CTHRC1 siRNA (h): sc-77043

BACKGROUND

CTHRC1 (collagen triple helix repeat containing 1) is a 243 amino acid secreted protein that localizes to the extracellular matrix and contains one collagen-like domain. Expressed as two alternatively spliced isoforms, the first of which is expressed in calcified atherosclerotic plaque and chondrocyte-like cells, CTHRC1 is thought to function as a negative regulator of collagen matrix deposition and may also play a role in the stabilization of ligand-receptor interactions in the Wnt pathway. CTHRC1 is widely present in a variety of cancers, including melanoma and breast carcinoma, and may participate in cancer cell migration and cancer tissue invasion and metastasis. The gene encoding CTHRC1 maps to human chromosome 8q22.3, which consists of nearly 146 million base pairs, houses more than 800 genes and is associated with a variety of diseases and malignancies.

REFERENCES

1. Pygay, P., et al. 2005. Collagen triple helix repeat containing 1, a novel secreted protein in injured and diseased arteries, inhibits collagen expression and promotes cell migration. *Circ. Res.* 96: 261-268.
2. Tang, L., et al. 2006. Aberrant expression of collagen triple helix repeat containing 1 in human solid cancers. *Clin. Cancer Res.* 12: 3716-3722.
3. LeClair, R.J., et al. 2007. CTHRC1 is a novel inhibitor of transforming growth factor- β signaling and neointimal lesion formation. *Circ. Res.* 100: 826-833.
4. LeClair, R. and Lindner, V. 2007. The role of collagen triple helix repeat containing 1 in injured arteries, collagen expression, and transforming growth factor β signaling. *Trends Cardiovasc. Med.* 17: 202-205.

CHROMOSOMAL LOCATION

Genetic locus: CTHRC1 (human) mapping to 8q22.3.

PRODUCT

CTHRC1 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 CTHRC1 shRNA Plasmid (h): sc-77043-SH and CTHRC1 shRNA (h) Lentiviral Particles: sc-77043-V as alternate gene silencing products.

For independent verification of CTHRC1 (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-77043A, sc-77043B and sc-77043C.

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

CTHRC1 siRNA (h) is recommended for the inhibition of CTHRC1 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

CTHRC1 (1G12): sc-293270 is recommended as a control antibody for monitoring of CTHRC1 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 CTHRC1 gene expression knockdown using RT-PCR Primer: CTHRC1 (h)-PR: sc-77043-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Eriksson, J., et al. 2016. Gene expression analyses of primary melanomas reveal CTHRC1 as an important player in melanoma progression. *Oncotarget* 7: 15065-15092.

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.