SANTA CRUZ BIOTECHNOLOGY, INC.

CTGF siRNA (h): sc-39329

BACKGROUND

Connective tissue growth factor (CTGF, also known as hypertrophic chondrocyte-specific gene product 24 or Hcs24), is a member of the CCN family of immediate early proteins, which are involved in cell proliferation, migration and matrix production. CTGF is a cysteine-rich peptide that is secreted by endothelial cells, fibroblasts, smooth muscle cells and myofibroblasts. Its expression is increased in various human and animal fibrotic diseases. Specifically, CTGF was observed to be strongly up-regulated in human proliferative and fibrogenic renal disease. In addition, CTGF is a growth factor for vascular smooth muscle cells (VSMC), and it may play a similar role in promoting VSMC growth and migration *in vivo*.

CHROMOSOMAL LOCATION

Genetic locus: CTGF (human) mapping to 6q23.2.

PRODUCT

CTGF 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CTGF shRNA Plasmid (h): sc-39329-SH and CTGF shRNA (h) Lentiviral Particles: sc-39329-V as alternate gene silencing products.

For independent verification of CTGF (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-39329A, sc-39329B and sc-39329C.

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

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

CTGF (E-5): sc-365970 is recommended as a control antibody for monitoring of CTGF 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 CTGF gene expression knockdown using RT-PCR Primer: CTGF (h)-PR: sc-39329-PR (20 µl, 596 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kikuchi, R., et al. 2007. Promoter hypermethylation contributes to frequent inactivation of a putative conditional tumor suppressor gene connective tissue growth factor in ovarian cancer. Cancer Res. 67: 7095-7105.
2. Barbolina, M.V., et al. 2009. Downregulation of connective tissue growth factor by three-dimensional matrix enhances ovarian carcinoma cell invasion. Int. J. Cancer 125: 816-825.
3. Bordonaro, M., et al. 2011. The Notch ligand Delta-like 1 integrates inputs from TGFβ/activin and Wnt pathways. Exp. Cell Res. 317: 1368-1381.
4. Gan, L., et al. 2011. Blockade of lysophosphatidic acid receptors LPAR1/3 ameliorates lung fibrosis induced by irradiation. Biochem. Biophys. Res. Commun. 409: 7-13.
5. Cheng, M., et al. 2014. Construction of a CTGF and RFP-coexpressed renal tubular epithelial cell and its application on evaluation of CTGF-specific siRNAs on epithelial-mesenchymal transition. Urology 83: 1443.e1-1443.e8.
6. Yang, K., et al. 2016. CTGF enhances resistance to 5-FU-mediating cell apoptosis through FAK/MEK/ERK signal pathway in colorectal cancer. Onco Targets Ther. 9: 7285-7295.
7. Hartman, M.L., et al. 2017. Vemurafenib and trametinib reduce expression of CTGF and IL-8 in V600EBRAF melanoma cells. Lab. Invest. 97: 217-227.
8. Kamatsuki, Y., et al. 2019. Possible reparative effect of low-intensity pulsed ultrasound (LIPUS) on injured meniscus. J. Cell Commun. Signal. 13: 193-207.

RESEARCH USE

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