

CTGF siRNA (m): sc-39330

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 (mouse) mapping to 10 A4.

PRODUCT

CTGF 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CTGF shRNA Plasmid (m): sc-39330-SH and CTGF shRNA (m) Lentiviral Particles: sc-39330-V as alternate gene silencing products.

For independent verification of CTGF (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-39330A, sc-39330B and sc-39330C.

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

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

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-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 CTGF gene expression knockdown using RT-PCR Primer: CTGF (m)-PR: sc-39330-PR (20 μ l, 503 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Adam, O., et al. 2010. Rac1-induced connective tissue growth factor regulates connexin 43 and N-cadherin expression in atrial fibrillation. *J. Am. Coll. Cardiol.* 55: 469-480.
- Adam, O., et al. 2011. Increased lysyl oxidase expression and collagen cross-linking during atrial fibrillation. *J. Mol. Cell. Cardiol.* 50: 678-685.
- Adam, O., et al. 2012. Role of miR-21 in the pathogenesis of atrial fibrosis. *Basic Res. Cardiol.* 107: 278.
- Gruber, R., et al. 2013. Enamel matrix derivative inhibits adipocyte differentiation of 3T3-L1 cells via activation of TGF- β RI kinase activity. *PLoS ONE* 8: e71046.
- Chang, C.H., et al. 2016. *Nelumbo nucifera* Gaertn leaves extract inhibits the angiogenesis and metastasis of breast cancer cells by downregulation connective tissue growth factor (CTGF) mediated PI3K/Akt/ERK signaling. *J. Ethnopharmacol.* 188: 111-122.
- Alam, K.J., et al. 2017. MicroRNA 375 regulates proliferation and migration of colon cancer cells by suppressing the CTGF-EGFR signaling pathway. *Int. J. Cancer* 141: 1614-1629.

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.