SANTA CRUZ BIOTECHNOLOGY, INC.

Cyr61 siRNA (h): sc-39331

BACKGROUND

Cyr61 is a secreted heparin binding protein, encoded by a growth factor-inducible immediate-early gene, that associates with the extracellular matrix and connective tissue. Cyr61 is a member of a distinct family of angiogenic and vasculogenic regulators designated CCN proteins, which includes connective tissue growth factor (CTGF) and the mouse Cyr61 homolog, Fisp12. As an angiogenic inducer, Cyr61 binds to the cell surface receptor Integrin α_V/β_3, where it then stimulates cell adhesion and migration and promotes DNA synthesis of human vascular endothelial cells. Expression of Cyr61 is elevated during vessel growth, wound healing and chondrocyte differentiation. Cyr61 is also detected in a wide variety of tumors as it induces tumor growth and functions as a marker of tumor progression.

CHROMOSOMAL LOCATION

Genetic locus: CYR61 (human) mapping to 1p22.3.

PRODUCT

Cyr61 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 Cyr61 shRNA Plasmid (h): sc-39331-SH and Cyr61 shRNA (h) Lentiviral Particles: sc-39331-V as alternate gene silencing products.

For independent verification of Cyr61 (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-39331A, sc-39331B and sc-39331C.

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

Cyr61 siRNA (h) is recommended for the inhibition of Cyr61 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.

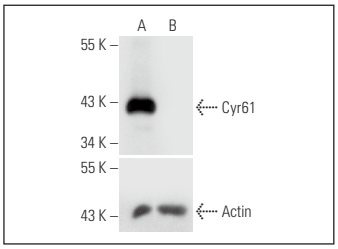
GENE EXPRESSION MONITORING

Cyr61 (A-10): sc-374129 is recommended as a control antibody for monitoring of Cyr61 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Cyr61 gene expression knockdown using RT-PCR Primer: Cyr61 (h)-PR: sc-39331-PR (20 µl, 470 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Cyr61 shRNA Plasmid (h): sc-39331-SH. Western blot analysis of human Cyr61 expression in Cyr61 transfected (**A**) and Cyr61/Cyr61 shRNA Plasmid cotransfected (**B**) 293T cells. Blot probed with Cyr61 (N-16): sc-8560. Actin (C-11): sc-1615 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Jin, Y., et al. 2005. Cyr61 protects against hyperoxia-induced cell death via Akt pathway in pulmonary epithelial cells. Am. J. Respir. Cell Mol. Biol. 33: 297-302.
2. Zhang, F., et al. 2018. Anticancer activity of metformin, an antidiabetic drug, against ovarian cancer cells involves inhibition of cysteine-rich 61 (Cyr61)/Akt/mammalian target of rapamycin (mTOR) signaling pathway. Med. Sci. Monit. 24: 6093-6101.
3. Hellinger, J.W., et al. 2019. Inhibition of CYR61-S100A4 axis limits breast cancer invasion. Front. Oncol. 9: 1074.
4. Cheng, S.P., et al. 2020. Overexpression of chitinase-3-like protein 1 is associated with structural recurrence in patients with differentiated thyroid cancer. J. Pathol. 252: 114-124.
5. Kim, H., et al. 2021. YAP, CTGF and Cyr61 are overexpressed in tamoxifen-resistant breast cancer and induce transcriptional repression of ERα. J. Cell Sci. 134: jcs256503.
6. Bauerschmitz, G., et al. 2023. Inhibition of increased invasiveness of breast cancer cells with acquired tmoxifen resistance by suppression of CYR61. Cancer Genomics Proteomics 20: 531-538.

RESEARCH USE

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