SANTA CRUZ BIOTECHNOLOGY, INC.

RECK siRNA (h): sc-39718

BACKGROUND

RECK (reversion-inducing-cysteine-rich protein with Kazal motifs) is a membrane anchored glycoprotein that binds to and inhibits the proteolytic activity of matrix metalloproteinase-9 (MMP-9). The enzymatic activity of MMP-9 facilitates tumor invasion by proteolytically digesting the extracellular matrix, thereby enabling tumor growth, expansion and metastasis. RECK inhibits the secretion and activation of MMP-9 into the extracellular matrix, which results in the inhibition of tumor growth. RECK contains multiple EGF-like repeats and serine-protease inhibitor-like domains. The expression of RECK is suppressed in several tumors and oncogenically transformed cells, suggesting that the loss of RECK activity correlates with transformed phenotypes. Transcriptional activation of RECK is potentially negatively regulated by the Sp1 family of transcription factors, as it contains two Sp1 binding motifs in the promoter region, and in cells transformed with the Ras oncogene, the Sp1 promoter region is essential for repressing RECK gene expression.

CHROMOSOMAL LOCATION

Genetic locus: RECK (human) mapping to 9p13.3.

PRODUCT

RECK siRNA (h) is a target-specific 19-25 nt siRNA 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 RECK shRNA Plasmid (h): sc-39718-SH and RECK shRNA (h) Lentiviral Particles: sc-39718-V as alternate gene silencing products.

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

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

RECK (G-4): sc-373929 is recommended as a control antibody for monitoring of RECK 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 RECK gene expression knockdown using RT-PCR Primer: RECK (h)-PR: sc-39718-PR (20 µl, 574 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, N., et al. 2012. Increased miR-222 in *H. pylori*-associated gastric cancer correlated with tumor progression by promoting cancer cell proliferation and targeting RECK. FEBS Lett. 586: 722-728.
2. Zhou, L., et al. 2013. MicroRNA-21 regulates the migration and invasion of a stem-like population in hepatocellular carcinoma. Int. J. Oncol. 43: 661-669.
3. Wang, J.Y., et al. 2014. miR-21 overexpression enhances TGF-β1-induced epithelial-to-mesenchymal transition by target Smad7 and aggravates renal damage in diabetic nephropathy. Mol. Cell. Endocrinol. 392: 163-172.
4. Zhang, J., et al. 2014. miR-96 promotes tumor proliferation and invasion by targeting RECK in breast cancer. Oncol. Rep. 31: 1357-1363.
5. Qi, Q., et al. 2015. Involvement of RECK in gambogic acid induced anti-invasive effect in A549 human lung carcinoma cells. Mol. Carcinog. 54: E13-E25.
6. Ning, S. and Ma, X. 2019. Dephosphorylation-induced EZH2 activation mediated RECK downregulation by ERK1/2 signaling. J. Cell. Physiol. 234: 19010-19018.
7. Shen, Z., et al. 2020. Activation of Stat-3 signaling by RECK downregulation via Ros is involved in the 27-hydroxycholesterol-induced invasion in breast cancer cells. Free Radic. Res. 54: 126-136.
8. Teng, M., et al. 2021. Salvianolic acid B targets mortalin and inhibits the migration and invasion of hepatocellular carcinoma via the RECK/STAT3 pathway. Cancer Cell Int. 21: 654.

RESEARCH USE

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