SANTA CRUZ BIOTECHNOLOGY, INC.

IL-8 siRNA (h): sc-39631

BACKGROUND

Interleukin-8, or IL-8, the prototypic member of the C-X-C, or α, family of chemokines, is a chemoattractant cytokine involved in the chemotaxis and activation of neutrophils. IL-8 expression has been correlated to a large number of chronic inflammatory diseases, including inflammatory bowel disease (IBD) and atherosclerosis. IL-8 is cleaved from a 99 amino acid precursor to a 72 amino acid, nonglycosylated, biologically active protein. IL-8 monomers and dimers exhibit a dynamic equilibrium both free in solution and in cell surface-bound forms and thus regulate chemotaxis and receptor signaling. Research has shown that IL-8 dimerization functions as a negative regulator for IL-8 receptor function. Two IL-8 receptors, designated IL-8RA and IL-8RB, have been described and share 77% sequence identity. Both are seven-transmembrane domain proteins (7TMD), similar to the G protein-coupled receptors and, in addition to IL-8, serve as receptors for other members of the α and β chemokine families.

CHROMOSOMAL LOCATION

Genetic locus: IL8 (human) mapping to 4q13.3.

PRODUCT

IL-8 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 IL-8 shRNA Plasmid (h): sc-39631-SH and IL-8 shRNA (h) Lentiviral Particles: sc-39631-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

IL-8 siRNA (h) is recommended for the inhibition of IL-8 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

IL-8 (C-11): sc-376750 is recommended as a control antibody for monitoring of IL-8 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 IL-8 gene expression knockdown using RT-PCR Primer: IL-8 (h)-PR: sc-39631-PR (20 µl, 578 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

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3. Li, X.P., et al. 2015. Co-expression of CXCL8 and HIF-1α is associated with metastasis and poor prognosis in hepatocellular carcinoma. Oncotarget 6: 22880-22889.
4. Singha, B., et al. 2015. IKK inhibition increases bortezomib effectiveness in ovarian cancer. Oncotarget 6: 26347-26358.
5. Zhang, J., et al. 2016. Benzopyrene promotes lung cancer A549 cell migration and invasion through up-regulating cytokine IL8 and chemokines CCL2 and CCL3 expression. Exp. Biol. Med. 241: 1516-1523.
6. Zanotto-Filho, A., et al. 2017. Inflammatory landscape of human brain tumors reveals an NFκB dependent cytokine pathway associated with mesenchymal glioblastoma. Cancer Lett. 390: 176-187.
7. Gatla, H.R., et al. 2017. Histone deacetylase (HDAC) inhibition induces IκB kinase (IKK)-dependent interleukin-8/CXCL8 expression in ovarian cancer cells. J. Biol. Chem. 292: 5043-5054.
8. Shuai, F., et al. 2018. MicroRNA-204 inhibits the growth and motility of colorectal cancer cells by downregulation of CXCL8. Oncol. Res. 26: 1295-1305.
9. Chen, L., et al. 2018. The role of IL-8/CXCR2 signaling in microcystin-LR triggered endothelial cell activation and increased vascular permeability. Chemosphere 194: 43-48.
10. Uddin, M.M., et al. 2018. Proteasome inhibition induces IKK-dependent interleukin-8 expression in triple negative breast cancer cells: opportunity for combination therapy. PLoS ONE 13: e0201858.
11. Zanotto-Filho, A., et al. 2018. Sorafenib improves alkylating therapy by blocking induced inflammation, invasion and angiogenesis in breast cancer cells. Cancer Lett. 425: 101-115.

RESEARCH USE

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