

CKR-5 siRNA (h): sc-35062

BACKGROUND

C-C or β chemokine family members are characterized by a pair of adjacent cysteine residues and serve as potent chemoattractants and activators of monocytes and T cells. C-C chemokine receptor family members include CKR-1, CKR-2A, CKR-2B, CKR-3, CKR-4, CKR-5, CKR-6, CKR-7, CKR-8, CKR-9, CKR-10 and the Duffy blood group antigen. Each of these receptors are G protein-coupled, seven pass transmembrane domain proteins whose major physiological role is to function in the chemotaxis of T cells and phagocytic cells to areas of inflammation. However, this receptor family has also been shown to facilitate viral infection. Termed a “coreceptor”, CKR-5, along with CD4, has been shown to be a major receptor for HIV. CKR-5 tends to associate with macrophage-tropic viruses, such as macrophage tropic HIV-1, while CKR-2B and CKR-3 bind a minority of viruses.

CHROMOSOMAL LOCATION

Genetic locus: CCR5 (human) mapping to 3p21.31.

PRODUCT

CKR-5 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CKR-5 shRNA Plasmid (h): sc-35062-SH and CKR-5 shRNA (h) Lentiviral Particles: sc-35062-V as alternate gene silencing products.

For independent verification of CKR-5 (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-35062A, sc-35062B and sc-35062C.

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

CKR-5 siRNA (h) is recommended for the inhibition of CKR-5 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 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

CKR-5 (D-6): sc-17833 is recommended as a control antibody for monitoring of CKR-5 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 CKR-5 gene expression knockdown using RT-PCR Primer: CKR-5 (h)-PR: sc-35062-PR (20 μ l, 542 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

SELECT PRODUCT CITATIONS

- Tang, C.H., et al. 2010. The CCL5/CCR5 axis promotes interleukin-6 production in human synovial fibroblasts. *Arthritis Rheum.* 62: 3615-3624.
- Wang, S.W., et al. 2012. CCL5 and CCR5 interaction promotes cell motility in human osteosarcoma. *PLoS ONE* 7: e35101.
- Sarkar, R., et al. 2013. HIV-1 gp120 protein downregulates Nef induced IL-6 release in immature dendritic cells through interplay of DC-SIGN. *PLoS ONE* 8: e59073.
- Zhu, F., et al. 2014. Eotaxin-1 promotes prostate cancer cell invasion via activation of the CCR3-ERK pathway and upregulation of MMP-3 expression. *Oncol. Rep.* 31: 2049-2054.
- Baghel, K.S., et al. 2016. Macrophages promote matrix protrusive and invasive function of breast cancer cells via MIP-1 β dependent upregulation of MYO3A gene in breast cancer cells. *Oncoimmunology* 5: e1196299.
- Kodama, T., et al. 2020. CCL3-CCR5 axis contributes to progression of esophageal squamous cell carcinoma by promoting cell migration and invasion via Akt and ERK pathways. *Lab. Invest.* 100: 1140-1157.
- Wellems, V., et al. 2021. Role of CCR3 in respiratory syncytial virus infection of airway epithelial cells. *iScience* 24: 103433.
- Guan, B., et al. 2022. CCL3-CCR5 axis promotes cell migration and invasion of colon adenocarcinoma via Akt signaling pathway. *Environ. Toxicol.* E-published.

RESEARCH USE

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