

CKR-2 siRNA (h): sc-270220

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. CKR-2 (C-C chemokine receptor type 2) is a 374 amino acid multi-pass membrane protein that belongs to the C-C chemokine receptor family and is expressed as two isoforms, designated CKR-2A and CKR-2B. Both CKR-2 isoforms function as receptors for a variety of proteins, including MCP-1 and MCP-3, thereby influencing intracellular calcium levels and affecting signal transduction throughout the cell.

REFERENCES

- Schweickart, V.L., et al. 1994. Cloning of human and mouse EBI1, a lymphoid-specific G protein-coupled receptor encoded on human chromosome 17q12-q21.2. *Genomics* 23: 643-650.
- Deng, H., et al. 1996. Identification of a major co-receptor for primary isolates of HIV-1. *Nature* 381: 661-666.

CHROMOSOMAL LOCATION

Genetic locus: CCR2 (human) mapping to 3p21.31.

PRODUCT

CKR-2 siRNA (h) is a pool of 2 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-2 shRNA Plasmid (h): sc-270220-SH and CKR-2 shRNA (h) Lentiviral Particles: sc-270220-V as alternate gene silencing products.

For independent verification of CKR-2 (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-270220A and sc-270220B.

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-2 siRNA (h) is recommended for the inhibition of CKR-2 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-2B (A-11): sc-74490 is recommended as a control antibody for monitoring of CKR-2 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:

- 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-2 gene expression knockdown using RT-PCR Primer: CKR-2 (h)-PR: sc-270220-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Fang, W.B., et al. 2012. CCL2/CCR2 chemokine signaling coordinates survival and motility of breast cancer cells through Smad3 protein- and p42/44 mitogen-activated protein kinase (MAPK)-dependent mechanisms. *J. Biol. Chem.* 287: 36593-36608.
- 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.
- Liu, J.F., et al. 2020. Monocyte chemoattractant protein-1 promotes cancer cell migration via c-Raf/MAPK/AP-1 pathway and MMP-9 production in osteosarcoma. *J. Exp. Clin. Cancer Res.* 39: 254.
- Guo, Y., et al. 2022. Tumor cell derived exosomal GOT1 suppresses tumor cell ferroptosis to accelerate pancreatic cancer progression by activating Nrf2/HO-1 axis via upregulating CCR2 expression. *Cells* 11: 3893.

RESEARCH USE

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