

CXCR-7 siRNA (h): sc-94573

BACKGROUND

Members of the C-X-C or α chemokine family are characterized by a pair of cysteine residues separated by a single amino acid and primarily function as chemoattractants for neutrophils. The C-X-C family includes IL-8, NAP-2, MSGA and stromal cell derived factor-1 (SDF-1). Receptors for the C-X-C family are G protein-coupled, seven pass transmembrane domain proteins and include proteins such as IL-8RA, IL-8RB, CXCR-3 and fusin (also designated LESTR or CXCR-4). C-X-C chemokine receptor type 7 (CXCR-7), also known as RDC-1, is a 362 amino acid receptor for SDF-1. Initially identified as a receptor for vasoactive intestinal peptide (VIP), it is now considered to be an orphan receptor. CXCR-7, with CSCR-4, also acts as a coreceptor for human immunodeficiency viruses (HIV). Highly expressed in monocytes, B-cells and basophils, and highly active in various biological processes, including cell growth, cell adhesion and tumor growth, CXCR-7 may play a role in tumorigenesis.

REFERENCES

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- Infantino, S., et al. 2006. Expression and regulation of the orphan receptor RDC1 and its putative ligand in human dendritic and B cells. *J. Immunol.* 176: 2197-2207.
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- Miao, Z., et al. 2007. CXCR7 (RDC1) promotes breast and lung tumor growth *in vivo* and is expressed on tumor-associated vasculature. *Proc. Natl. Acad. Sci. USA* 104: 15735-15740.
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CHROMOSOMAL LOCATION

Genetic locus: ACKR3 (human) mapping to 2q37.3.

PRODUCT

CXCR-7 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 CXCR-7 shRNA Plasmid (h): sc-94573-SH and CXCR-7 shRNA (h) Lentiviral Particles: sc-94573-V as alternate gene silencing products.

For independent verification of CXCR-7 (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-94573A, sc-94573B and sc-94573C.

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

CXCR-7 siRNA (h) is recommended for the inhibition of CXCR-7 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CXCR-7 gene expression knockdown using RT-PCR Primer: CXCR-7 (h)-PR: sc-94573-PR (20 μ l, 419 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Beloribi-Djefafli, S., et al. 2015. Exosomal lipids induce human pancreatic tumoral MiaPaCa-2 cells resistance through the CXCR4-SDF-1 α signaling axis. *Oncoscience* 2: 15-30.
- Cao, Z., et al. 2016. CXCR7/p-ERK-signaling is a novel target for therapeutic vasculogenesis in patients with coronary artery disease. *PLoS ONE* 11: e0161255.
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RESEARCH USE

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