SANTA CRUZ BIOTECHNOLOGY, INC.

CXCR-7 siRNA (m): sc-142643

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

1. Libert, F., et al. 1991. Chromosomal mapping of A1 and A2 adenosine receptors, VIP receptor, and a new subtype of serotonin receptor. Genomics 11: 225-227.
2. Nagata, S., et al. 1992. RDC1 may not be VIP receptor. Trends Pharmacol. Sci. 13: 102-103.
3. Burns, J.M., et al. 2006. A novel chemokine receptor for SDF-1 and I-TAC involved in cell survival, cell adhesion, and tumor development. J. Exp. Med. 203: 2201-2213.
4. 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.
5. Dambly-Chaudière, C., et al. 2007. Control of cell migration in the development of the posterior lateral line: antagonistic interactions between the chemokine receptors CXCR4 and CXCR7/RDC1. BMC Dev. Biol. 7: 23.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: Ackr3 (mouse) mapping to 1 D.

PRODUCT

CXCR-7 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CXCR-7 shRNA Plasmid (m): sc-142643-SH and CXCR-7 shRNA (m) Lentiviral Particles: sc-142643-V as alternate gene silencing products.

For independent verification of CXCR-7 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-142643A, sc-142643B and sc-142643C.

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

CXCR-7 siRNA (m) is recommended for the inhibition of CXCR-7 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CXCR-7 gene expression knockdown using RT-PCR Primer: CXCR-7 (m)-PR: sc-142643-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Melchionna, R., et al. 2010. Induction of myogenic differentiation by SDF-1 via CXCR4 and CXCR7 receptors. Muscle Nerve 41: 828-835.
2. Ma, M., et al. 2011. Mesenchymal stromal cells may enhance metastasis of neuroblastoma via SDF-1/CXCR4 and SDF-1/CXCR7 signaling. Cancer Lett. 312: 1-10.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.