SANTA CRUZ BIOTECHNOLOGY, INC.

XCR1 siRNA (h): sc-76931

BACKGROUND

G protein-coupled receptors (GPRs), also known as seven transmembrane receptors, heptahelical receptors or 7TM receptors, comprise a superfamily of proteins that play a role in many different stimulus-response pathways. G protein-coupled receptors translate extracellular signals into intracellular signals (G protein activation) and they respond to a variety of signaling molecules, such as hormones and neurotransmitters. XCR1, also known as GPR5 (G protein-coupled receptor 5) or CCXCR1 (chemokine (C motif) receptor 1), is a 333 amino acid multiass membrane protein that belongs to the G protein-coupled receptor 1 family. Functioning as a receptor for select chemokines, XCR1 transduces cellular signals by increasing intracellular calcium ion levels.

REFERENCES

1. Larhammar, D., et al. 1993. The receptor revolution—multiplicity of G protein-coupled receptors. Drug Des. Discov. 9: 179-188.
2. Gao, J.L., et al. 1993. Structure and functional expression of the human macrophage inflammatory protein 1 α/RANTES receptor. J. Exp. Med. 177: 1421-1427.
3. Heiber, M., et al. 1995. Isolation of three novel human genes encoding G protein-coupled receptors. DNA Cell Biol. 14: 25-35.
4. Yoshida, T., et al. 1998. Identification of single C motif-1/lymphotactin receptor XCR1. J. Biol. Chem. 273: 16551-16554.
5. Ji, T.H., et al. 1998. G protein-coupled receptors. I. Diversity of receptor-ligand interactions. J. Biol. Chem. 273: 17299-17302.
6. Maho, A., et al. 1999. Mapping of the CCXCR1, CX3CR1, CCBP2 and CCR9 genes to the CCR cluster within the 3p21.3 region of the human genome. Cytogenet. Cell Genet. 87: 265-268.
7. Lee, D.K., et al. 2001. Discovery and mapping of ten novel G protein-coupled receptor genes. Gene 275: 83-91.
8. Shinkai, H., et al. 2005. Genomic structure of eight porcine chemokine receptors and intergene sharing of an exon between CCR1 and XCR1. Gene 349: 55-66.

CHROMOSOMAL LOCATION

Genetic locus: XCR1 (human) mapping to 3p21.31.

PRODUCT

XCR1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see XCR1 shRNA Plasmid (h): sc-76931-SH and XCR1 shRNA (h) Lentiviral Particles: sc-76931-V as alternate gene silencing products.

For independent verification of XCR1 (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-76931A, sc-76931B and sc-76931C.

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

XCR1 siRNA (h) is recommended for the inhibition of XCR1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor XCR1 gene expression knockdown using RT-PCR Primer: XCR1 (h)-PR: sc-76931-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. Wang, T., et al. 2015. XCR1 promotes cell growth and migration and is correlated with bone metastasis in non-small cell lung cancer. Biochem. Biophys. Res. Commun. 464: 635-641.
2. Zhang, S.M., et al. 2018. XCL1-XCR1 pathway promotes trophoblast invasion at maternal-fetal interface by inducing MMP-2/MMP-9 activity. Am. J. Reprod. Immunol. 80: e12990.
3. Do, H.T.T. and Cho, J. 2020. Involvement of the ERK/HIF-1α/EMT pathway in XCL1-induced migration of MDA-MB-231 and SK-BR-3 breast cancer cells. Int. J. Mol. Sci. 22: E89.

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.