SANTA CRUZ BIOTECHNOLOGY, INC.

FPR2 siRNA (h): sc-40123

BACKGROUND

The N-formyl peptide receptor (FPR) family is comprised of three members, FPR, FPR like-1 (FPRL1, also designated lipoxin A4 receptor, FPRH1 and FPR2) and FPR like-2 (FPRL2), all of which are chemotactic G protein-coupled receptors that contain seven transmembrane domains. These receptors are found on the surface of phagocytic leukocytes, such as neutrophils and monocytes, and each family member contains specific residues, which are responsible for determining its ligand specificity. FPRL1 is a promiscuous receptor that binds to several ligands, including lipoxin A4, N-formyl-methionyl-leucyl-phenylalanine (fMLP), serum Amyloid A (SAA), prion peptide and the 42 amino acid form of β Amyloid. Upon activation, FPRL1 induces migration and calcium mobilization in human monocytes and neutrophils and is involved in inflammatory and host defense responses. FPRL1 may mediate inflammation in prion and Alzheimer's diseases, which makes it a potential target for therapeutic agents.

REFERENCES

1. Gerard, N.P., et al. 1993. Human chemotaxis receptor genes cluster at 19q13.3-13.4. Characterization of the human C5a receptor gene. Biochemistry 32: 1243-1250.
2. Shen, W., et al. 2000. Activation of the chemotactic peptide receptor FPRL1 in monocytes phosphorylates the chemokine receptor CCR5 and attenuates cell responses to selected chemokines. Biochem. Biophys. Res. Commun. 272: 276-283.

CHROMOSOMAL LOCATION

Genetic locus: FPR2 (human) mapping to 19q13.41.

PRODUCT

FPR2 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 FPR2 shRNA Plasmid (h): sc-40123-SH and FPR2 shRNA (h) Lentiviral Particles: sc-40123-V as alternate gene silencing products.

For independent verification of FPR2 (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-40123A, sc-40123B and sc-40123C.

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

FPR2 siRNA (h) is recommended for the inhibition of FPR2 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.

GENE EXPRESSION MONITORING

FPR2 (GM1D6): sc-57141 is recommended as a control antibody for monitoring of FPR2 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FPR2 gene expression knockdown using RT-PCR Primer: FPR2 (h)-PR: sc-40123-PR (20 µl, 541 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cheng, X., et al. 2010. ECRG2 regulates ECM degradation and uPAR/FPRL1 pathway contributing cell invasion/migration. Cancer Lett. 290: 87-95.
2. Dong, Z., et al. 2011. PTX3, a key component of innate immunity, is induced by SAA via FPRL1-mediated signaling in HAECs. J. Cell. Biochem. 112: 2097-2105.
3. Singh, D., et al. 2013. The human antimicrobial peptide LL-37, but not the mouse ortholog, mCRAMP, can stimulate signaling by poly(I:C) through a FPRL1-dependent pathway. J. Biol. Chem. 288: 8258-8268.
4. Ren, P., et al. 2014. Serum Amyloid A promotes osteosarcoma invasion via upregulating $\alpha_v\beta_3$ Integrin. Mol. Med. Rep. 10: 3106-3112.
5. Kao, C., et al. 2016. Cathelicidin antimicrobial peptides with reduced activation of Toll-like receptor signaling have potent bactericidal activity against colistin-resistant bacteria. mBio 7: e01418-16.
6. Guo, Z., et al. 2016. Lipoxin A4 reduces inflammation through formyl peptide receptor 2/p38 MAPK signaling pathway in subarachnoid hemorrhage rats. Stroke 47: 490-497.
7. Yu, N., et al. 2017. Serum Amyloid A, an acute phase protein, stimulates proliferative and proinflammatory responses of keratinocytes. Cell Prolif. 50: e12320.
8. Benabdoun, H.A., et al. 2019. *In vitro* and *in vivo* assessment of the proresolutive and antiresorptive actions of resolvin D1: relevance to arthritis. Arthritis Res. Ther. 21: 72.

RESEARCH USE

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