SANTA CRUZ BIOTECHNOLOGY, INC.

FPR siRNA (h): sc-40121

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. Jesaitis, A.J., et al. 1993. Cytoskeletal regulation of chemotactic receptors: molecular complexation of N-formyl peptide receptors with G proteins and Actin. Eur. J. Haematol. 51: 288-293.
2. Gao, J.L., et al. 1993. Species and subtype variants of the N-formyl peptide chemotactic receptor reveal multiple important functional domains. J. Biol. Chem. 268: 25395-25401.
3. Belisle, B., et al. 2000. N-formyl peptide receptor ligation induces Rac-dependent Actin reorganization through $G_{\beta\gamma}$ subunits and class IA phosphoinositide 3-kinase. J. Biol. Chem. 275: 16225-16232.
4. Mills, J.S., et al. 2000. Characterization of the binding site on the formyl peptide receptor using three receptor mutants and analogs of Met-Leu-Phe and Met-Met-Trp-Leu-Leu. J. Biol. Chem. 275: 39012-39017.
5. Shen, W., et al. 2000. Downregulation of the chemokine receptor CCR5 by activation of chemotactic formyl peptide receptor in human monocytes. Blood 96: 2887-2894.
6. He, R., et al. 2000. The synthetic peptide Trp-Lys-Tyr-Met-Val-D-Met is a potent chemotactic agonist for mouse formyl peptide receptor. J. Immunol. 165: 4598-4605.

CHROMOSOMAL LOCATION

Genetic locus: FPR1 (human) mapping to 19q13.41.

PRODUCT

FPR 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 FPR shRNA Plasmid (h): sc-40121-SH and FPR shRNA (h) Lentiviral Particles: sc-40121-V as alternate gene silencing products.

For independent verification of FPR (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-40121A, sc-40121B and sc-40121C.

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

FPR siRNA (h) is recommended for the inhibition of FPR 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 FPR gene expression knockdown using RT-PCR Primer: FPR (h)-PR: sc-40121-PR (20 µl, 518 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Schneider, E.H., et al. 2012. The leukocyte chemotactic receptor FPR1 is functionally expressed on human lens epithelial cells. J. Biol. Chem. 287: 40779-40792.
2. Montuori, N., et al. 2013. uPAR regulates pericellular proteolysis through a mechanism involving integrins and fMLF-receptors. Thromb. Haemost. 109: 309-318.
3. Kurniyati, K., et al. 2025. A bipartite bacterial virulence factor targets the complement system and neutrophil activation. EMBO J. 44: 1154-1184.

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.