SANTA CRUZ BIOTECHNOLOGY, INC.

PAF-R siRNA (h): sc-40165

BACKGROUND

Platelet-activating factor (PAF) is a pro-inflammatory lipid mediator that activates many cell types including leukocytes, platelets and vascular endothelial cells in response to cutaneous inflammation. PAF signaling is primarily directed through binding to the G protein-coupled PAF-receptors (PAF-R) and results in signal transduction by various pathways that are regulated by phospholipase C, phospholipase A2 and mitogen-activated protein kinases. Activation of PAF-R is associated with alterations in cell morphology, cytoskeletal remodeling and expression of inflammatory modulators, including cyclo-oxygenase-2, interleukin (IL)-6 and IL-8. Expression of PAF-R is upregulated by PAF and gut flora in intestinal epithelium. PAF-R transcription is downregulated by glucocorticoids as a result of eosinophil depletion, suggesting that PAF-R may play a role in both host defenses and inflammatory responses.

REFERENCES

1. Nakamura, M., et al. 1991. Molecular cloning and expression of platelet-activating factor receptor from human leukocytes. J. Biol. Chem. 266: 20400-20405.
2. Kunz, D., et al. 1992. The human leukocyte platelet-activating factor receptor. cDNA cloning, cell surface expression and construction of a novel epitope-bearing analog. J. Biol. Chem. 267: 9101-9106.
3. Muller, E., et al. 1993. Identification and functional characterization of platelet-activating factor receptors in human leukocyte populations using polyclonal anti-peptide antibody. Proc. Natl. Acad. Sci. USA 90: 5818-5822.
4. Predescu, D., et al. 1996. The vascular distribution of the platelet-activating factor receptor. Eur. J. Cell Biol. 69: 86-98.
5. Ahmed, A., et al. 1998. Localization, quantification and activation of platelet-activating factor receptor in human endometrium during the menstrual cycle: PAF stimulates NO, VEGF and FAK^{pp125}. FASEB J. 12: 831-843.
6. Kotelevets, L., et al. 1998. Inhibition by platelet-activating factor of Src- and hepatocyte growth factor-dependent invasiveness of intestinal and kidney epithelial cells. Phosphatidylinositol 3'-kinase is a critical mediator of tumor invasion. J. Biol. Chem. 273: 14138-14145.

CHROMOSOMAL LOCATION

Genetic locus: PTAFR (human) mapping to 1p35.3.

PRODUCT

PAF-R 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 PAF-R shRNA Plasmid (h): sc-40165-SH and PAF-R shRNA (h) Lentiviral Particles: sc-40165-V as alternate gene silencing products.

For independent verification of PAF-R (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-40165A, sc-40165B and sc-40165C.

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

PAF-R siRNA (h) is recommended for the inhibition of PAF-R 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 PAF-R gene expression knockdown using RT-PCR Primer: PAF-R (h)-PR: sc-40165-PR (20 µl, 428 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Guo, X., et al. 2019. Hydroxysafflor yellow A (HSYA) targets the platelet-activating factor (PAF) receptor and inhibits human bronchial smooth muscle activation induced by PAF. Food Funct. 10: 4661-4673.
2. Liu, J., et al. 2020. Particulate matter exposure promotes *Pseudomonas aeruginosa* invasion into airway epithelia by upregulating PAFR via the ROS-mediated PI3K pathway. Hum. Cell 33: 963-973.

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.