SANTA CRUZ BIOTECHNOLOGY, INC.

PF-4 siRNA (m): sc-60026

BACKGROUND

Platelet factor-4 (PF-4 or PF4) is a 70 amino acid protein that is released from the α-granules of activated platelets and binds with high affinity to heparin. Platelets secrete low molecular weight PF-4, which binds to and neutralizes heparin and related sulfated glycosaminoglycans (GAGs). Its major physiologic role appears to be neutralization of heparin-like molecules on the endothelial surface of blood vessels, thereby inhibiting local antithrombin III activity and promoting coagulation. As a strong chemoattractant for neutrophils and fibroblasts, PF-4 probably has a role in inflammation and wound repair. Both PF4 and eotaxin, a specific chemoattractant for eosinophils, have been shown to exhibit stronger expression in spleens of adult NOA mice (an animal model of allergic or atopic dermatitis) than in younger mice, parallel to the increase in ulcerative skin lesions in older mice. This suggests that PF-4 and eotaxin may play important roles in the etiology of atopic dermatitis. PF-4 is encoded by a small inducible gene (SIG), so called because of its small size and its stimulation with platelet activation. The gene which encodes PF-4 maps to human chromosome 4q13.3.

REFERENCES

1. Rybak, M.E., et al. 1989. Interaction of platelet factor four with cultured vascular endothelial cells. Blood 73: 1534-1539.
2. Eisman, R., et al. 1990. Structural and functional comparison of the genes for human platelet factor 4 and PF-4alt. Blood 76: 336-344.
3. Watanabe, O., et al. 1999. Significantly elevated expression of PF-4 (platelet factor 4) and eotaxin in the NOA mouse, a model for atopic dermatitis. J. Hum. Genet. 44: 173-176.
4. O'Donovan, N., et al. 1999. Physical mapping of the CXC chemokine locus on human chromosome 4. Cytogenet. Cell Genet. 84: 39-42.
5. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 173460. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Pf4 (mouse) mapping to 5 E1.

PRODUCT

PF-4 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 PF-4 shRNA Plasmid (m): sc-60026-SH and PF-4 shRNA (m) Lentiviral Particles: sc-60026-V as alternate gene silencing products.

For independent verification of PF-4 (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-60026A, sc-60026B and sc-60026C.

PROTOCOLS

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

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

PF-4 siRNA (m) is recommended for the inhibition of PF-4 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 PF-4 gene expression knockdown using RT-PCR Primer: PF-4 (m)-PR: sc-60026-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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