SANTA CRUZ BIOTECHNOLOGY, INC.

PF-4 (G-7): sc-374195

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 PF4 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 PF4alt. Blood 76: 336-344.
3. Watanabe, O., et al. 1999. Significantly elevated expression of PF4 (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/PF4V1 (human) mapping to 4q13.3.

SOURCE

PF-4 (G-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-67 near the N-terminus of mature chain of PF-4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374195 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

PF-4 (G-7) is recommended for detection of precursor and mature chain of PF-4 and PF4V1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

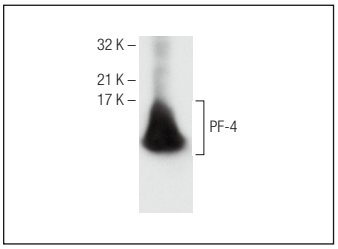
Molecular Weight of PF-4: 10 kDa.

Positive Controls: human platelet extract: sc-363773 or human spleen extract: sc-363779.

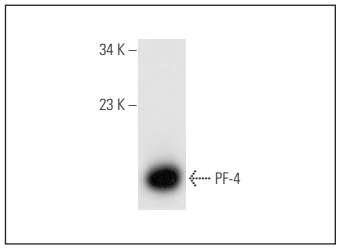
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PF-4 (G-7): sc-374195. Western blot analysis of PF-4 expression in human platelet extract.



PF-4 (G-7): sc-374195. Western blot analysis of PF-4 expression in human spleen tissue extract.

SELECT PRODUCT CITATIONS

1. Huang, C.C., et al. 2019. Increased platelet factor 4 and aberrant permeability of follicular fluid in PCOS. J. Formos. Med. Assoc. 118: 249-259.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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