

Product datasheet

Mouse PF4 ELISA Kit (CXCL4) ab202403

SimpleStep ELISA

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Overview

Product name Mouse PF4 ELISA Kit (CXCL4)

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Mouse serum	8			3.2%

Inter-assay

Sample	n	Mean	SD	CV%
Mouse serum	3			5.5%

Sample type

Cell culture supernatant, Serum, EDTA Plasma, Cit plasma

Assay type

Sandwich (quantitative)

Sensitivity

148 pg/ml

Range

0.25 ng/ml - 16 ng/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	97	93% - 99%
Cell culture media	91	83% - 96%
EDTA Plasma	101	100% - 102%
Cit plasma	110	106% - 114%

Assay time

1h 30m

Assay duration

One step assay

Species reactivity

Reacts with: Mouse

Does not react with: Sheep, Cow, Pig, Syrian hamster

Product overview

Abcam's mouse PF4 (CXCL4) *in vitro* SimpleStep ELISA™ (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of mouse PF4 protein in serum, plasma and cell culture supernatant samples.

The SimpleStep ELISA™ employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.

Notes

Platelet factor 4 (PF4) is a small cytokine belonging to the CXC chemokine family that is also known as chemokine (C-X-C motif) ligand 4 (CXCL4). Chemokines play fundamental roles in the development, homeostasis, and function of the immune system, and they have effects on cells of the central nervous system as well as on endothelial cells involved in angiogenesis and angiostasis. PF4 is a 70-amino acid protein (8 kDa) that is released from the alpha-granules of activated platelets and binds with high affinity to heparin. Specifically, the active protein is a tetramer of PF4 subunits that forms a ring of heparin-binding positive charges from sites at the C-terminal region of each monomer. In contrast to other CXC chemokines, PF4 does not contain an ELR motif and lacks binding to nearly all chemokine receptors. Mouse PF4 shares 64% and 89% amino acid identity with human and rat PF4, respectively.

As a strong chemoattractant for neutrophils and fibroblasts, PF4 probably has a role in inflammation and wound repair. However, the major physiologic role of PF4 appears to be neutralization of heparin-like molecules on the endothelial surface of blood vessels, thereby inhibiting local antithrombin III activity and promoting coagulation. There can be over 100-fold higher concentrations of PF4 within clots than within normal serum. Therapeutic doses of heparin (an anticoagulant) neutralize PF4 pro-coagulant effects. The complex between heparin and PF4 can be immunogenic, producing the pathological syndrome HITT (heparin-induced thrombocytopenia and thrombosis). In addition, immunogenic complexes of PF4 with apolipoprotein H can contribute to antiphospholipid syndrome (APS).

Platform

Microplate (12 x 8 well strips)

Properties

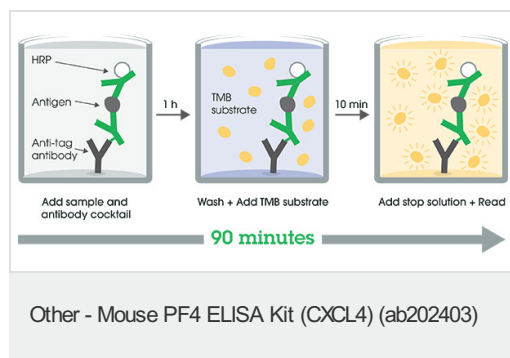
Storage instructions Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Mouse PF4 (CXCL4) Detector Antibody	1 x 600µl
10X Mouse PF4 (CXCL4) Capture Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent CP	1 x 6ml

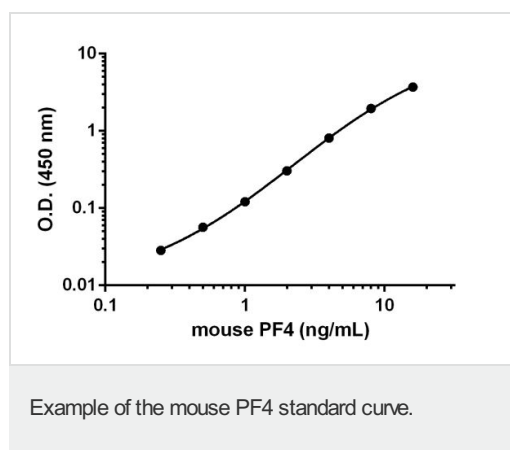
Components	1 x 96 tests
Mouse PF4 (CXCL4) Lyophilized Recombinant Protein	1 x 2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

Function	Released during platelet aggregation. Neutralizes the anticoagulant effect of heparin because it binds more strongly to heparin than to the chondroitin-4-sulfate chains of the carrier molecule. Chemotactic for neutrophils and monocytes. Inhibits endothelial cell proliferation, the short form is a more potent inhibitor than the longer form.
Sequence similarities	Belongs to the intercrine alpha (chemokine CxC) family.
Post-translational modifications	Binds non-covalently to a proteoglycan molecule.
Cellular localization	Secreted.

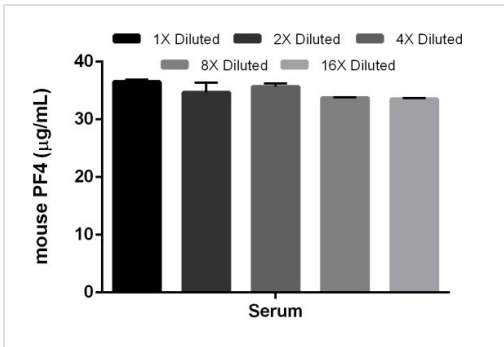
Images



SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

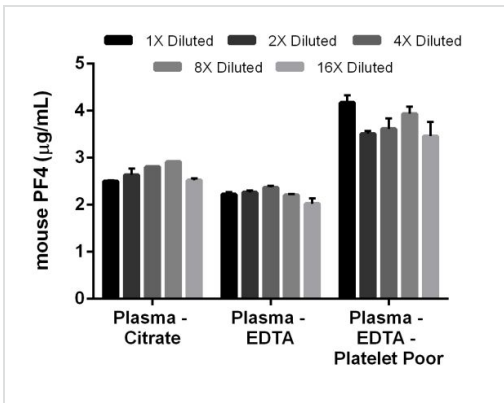


Background-subtracted data values (mean +/- SD) are graphed.



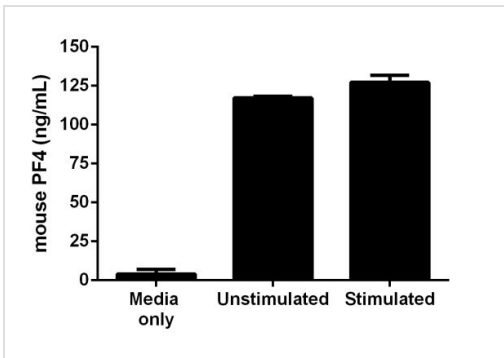
Linearity of dilution of native mouse PF4 in mouse serum.

Native mouse PF4 protein was measured in serum (diluted 1:2,500 in Sample Diluent NS) in a 2-fold dilution series in Sample Diluent NS. The interpolated dilution factor corrected values are graphed (mean +/- SD).



Linearity of dilution of native mouse PF4 in mouse Citrate, EDTA, and Platelet Poor EDTA plasmas.

Native mouse PF4 protein was measured in citrate plasma (1:300), EDTA plasma (1:400), and Platelet Poor EDTA plasma (1:350) in a 2-fold dilution series in Sample Diluent NS. The interpolated dilution factor corrected values are graphed (mean +/- SD).



Mouse PF4 expression is shown for cultured media from the J774A.1 mouse cell line.

J774A.1 cells were cultured in HGDMEM with 10% fetal calf serum, and 100 µg/mL of Kanamycin. J774A.1 cells were treated for 72 hours in the presence and absence of 1.5% PHA and 10ng/mL of PMA. Samples were loaded on the plate diluted 1:10 and the concentrations of mouse PF4 were interpolated from a calibration curve diluted in Sample Diluent NS. The interpolated dilution factor corrected values are graphed (mean +/- SD).

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