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PF-4/CXCL4

Catalog # PVGS1216

Product Information

Primary Accession	P02776
Species	Human
Sequence	Glu32-Ser101
Purity	> 95% as analyzed by SDS-PAGE > 95% as analyzed by HPLC
Endotoxin Level	
Biological Activity	ED_{50}
Expression System	HEK 293
Formulation	Lyophilized after extensive dialysis against PBS.
Reconstitution	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in ddH_2O or PBS up to 100 □g/ml.
Storage & Stability	Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	5196
Other Names	Platelet factor 4, PF-4, C-X-C motif chemokine 4, Iroplact, Oncostatin-A, Platelet factor 4, short form, Endothelial cell growth inhibitor, PF4, CXCL4, SCYB4
Target Background	Platelet factor 4, also known as CXCL4, is expressed in megakaryocytes and stored in the α-granules of platelets. Recombinant human PF-4 is a 7.8 kDa protein containing 70 amino acid residues, including the four highly conserved residues present in CXC chemokines. Platelet factor 4 can be antiproliferative and antiangiogenic, at least in part via interfering with FGF2 and VEGF heparin binding and thus inhibiting their signaling. However, it can also be proinflammatory and proatherogenic through multiple effects on monocytes, macrophages and endothelial cells.

Protein Information

Name	PF4
Synonyms	CXCL4, SCYB4
Function	Chemokine released during platelet aggregation that plays a role in different biological processes including hematopoiesis, cell proliferation, differentiation, and activation (PubMed:29930254, PubMed:9531587). Acts via different functional receptors including CCR1, CXCR3A or CXCR3B (PubMed:18174362, PubMed:29930254). Upon interaction with CXCR3A receptor, induces activated T-lymphocytes migration mediated via downstream Ras/extracellular signal-regulated kinase (ERK) signaling (PubMed:18174362, PubMed:24469069). Neutralizes the anticoagulant effect of heparin by binding more strongly to heparin than to the chondroitin-4-sulfate chains of the carrier molecule. Plays a role in the inhibition of hematopoiesis and in the maintenance of hematopoietic stem cell (HSC) quiescence (PubMed:9531587). Chemotactic for neutrophils and monocytes via CCR1 (PubMed:29930254). Inhibits endothelial cell proliferation. In cooperation with toll-like receptor 8/TLR8, induces chromatin remodeling and activates inflammatory gene expression via the TBK1-IRF5 axis (PubMed:35701499). In addition, induces myofibroblast differentiation and collagen synthesis in different precursor cells, including endothelial cells, by stimulating endothelial-to-mesenchymal transition (PubMed:34986347). Interacts with thrombomodulin/THBD to enhance the activation of protein C and thus potentiates its anticoagulant activity (PubMed:9395524).
Cellular Location	Secreted.

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