PF4V1 Protein, Human (HEK293, Fc)

Cat. No.:	HY-P76539
Synonyms:	Platelet factor 4 variant; CXCL4L1; PF4var1; SCYB4V1
Species:	Human
Source:	HEK293
Accession:	NP_002611.1 (F31-S104)
Gene ID:	5197
Molecular Weight:	Approximately38.69 kDa

PROPERTIES

AA Sequence	F A R A E A E E D G D L Q C L C V K T T S Q V R P R H I T S L E V I K A G P H C P T A Q L I A T L K N G R K I C L D L Q A L L Y K K I I K E H L E S
Biological Activity	Measured by its ability to inhibit proliferation of HUVEC human umbilical vein endothelial cells. The ED_{50} of this effect is 37.49 ng/mL, corresponding to a specific activity is 2.67×10^4 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	PF4V1 (CXCL4L1), a CXC chemokine, is originally isolated from thrombin stimulated platelets. Full-length human CXCL4L1/PF-4var is comprised of 104 amino acids. CXCL4L1 seems to be constitutively released by platelets, smooth muscle cells, human aortic and coronary smooth muscle cells and is inducible in monocytes, endothelial and osteosarcoma cells by inflammatory mediators. CXCL4L1 plays a role in inflammation, angiogenesis and cancer[1][2][3]. CXCL4 and its non-allelic variant CXCL4L1 are both platelet-derived chemokines. The mature CXCL4L1 protein is composed of 70 amino acids and differs in only three amino acids situated in the carboxy-terminal part of the protein (Pro58) Leu, Lys66) Glu, Leu67) His; CXCL4) CXCL4L1). Due to these changes in amino acids, CXCL4L1 is supposed to have a different

secondary structure and a lower affinity for heparin. In vivo, weak to strong expression of CXCL4L1 was detected in sarcoma tissue by immunohistochemistry. CXCL4L1 functions as a chemoattractant for activated T cells, NK cells and immature dendritic cells. CXCL4L1 is a more potent angiostatic chemokine compared to CXCL4. Compared to CXCL4, CXCL4L1 is less likely to form heterodimers with fFGF2 and VEGF or to compete for GAG-binding[1][2][3].

CXCL4L1 is found to be a more potent angiostatic and anti-tumoral chemokine compared to CXCL4 in various in vitro and in vivo assays. CXCL4L1 (10 ng/mL) is more potent than CXCL4 in inhibiting CXCL8/IL-8- or FGF-2-induced chemotaxis of endothelial cells. Further, CXCL4L1 is induced in human osteosarcoma cells (1.5-3.5 ng/mL) by IL-1β, TNF-α and IL-17A. CXCL4L1 is expressed and functioned in several cancers such as ovarian carcinoma, breast cancer, and pancreatic cancer. Additionally, CXCL4L1 is also strongly detected in colorectal carcinoma tissue samples, whereas CXCL4L1 staining in squamous cell carcinoma of the esophagus is weak to negative[1][2][3].

REFERENCES

[1]. Pieter Ruytinx, et al. CXCL4 and CXCL4L1 in cancer. Cytokine. 2018 Sep;109:65-71.

[2]. Dongyang Li, et al. PF4V1, an miRNA-875-3p target, suppresses cell proliferation, migration, and invasion in prostate cancer and serves as a potential prognostic biomarker. Cancer Manag Res. 2019 Mar 21;11:2299-2312.

[3]. Jo Vandercappellen, et al. The role of the CXC chemokines platelet factor-4 (CXCL4/PF-4) and its variant (CXCL4L1/PF-4var) in inflammation, angiogenesis and cancer. Cytokine Growth Factor Rev. 2011 Feb;22(1):1-18.

[4]. Pieter Ruytinx, et al. Relative distribution and biological characterization of CXCL4L1 isoforms in platelets from healthy donors. Biochem Pharmacol. 2017 Dec 1;145:123-131.

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