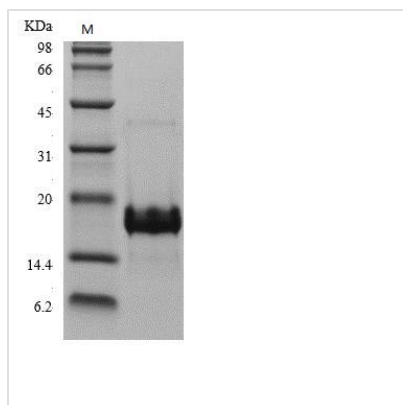




Recombinant Human Placenta growth factor protein (PGF) (Active)

Product Code	CSB-AP002731HU
Abbreviation	Recombinant Human PGF protein (Active)
Uniprot No.	P49763
Storage Buffer	0.2 μ m filtered PBS, pH 7.4, with 0.02 % Tween-20 ,lyophilized
Product Type	Growth Factors
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The biologically active as determined by its ability to chemoattract human monocytes using a concentration range of 5.0-50 ng/ml.
Purity	>97% as determined by SDS-PAGE.
Sequence	LPAVPPQQWA LSAGNGSSEV EVVPFQEVWG RSYCRALERL VDVVSEYPSE VEHMFSPSCV SLLRCTGCCG DENLHCVPVE TANVTMQLLK IRSGDRPSYV ELTFSQHVRC ECRPLREKMK PERRRPKGRG KRRREKQRPT DCHLCGDAVP RR
Research Area	Cancer
Source	E.Coli
Target Names	PGF
Expression Region	19-170aa
Tag Info	Tag-Free
Mol. Weight	17.3 kDa
Protein Length	Full Length of Mature Protein of Isoform 3
PubMed ID	1924389; 8148155; 7681160; 9207183; 12508121; 15489334; 7929268; 21215706; 11069911

Image





Description

The preparation of recombinant human PGF protein starts with inserting the PGF gene fragment (19-170aa) into a plasmid, which is then used to transform E.coli cells. Once the transformed cells express the recombinant PGF protein, it is subjected to affinity chromatography purification. Following purification, the protein's purity is analyzed via SDS-PAGE, reaching over 97%. The recombinant PGF protein has also been validated to be biologically active, as it chemoattracts human monocytes using a concentration range of 5.0-50 ng/ml. The endotoxin level of this PGF protein is less than 1.0 EU/ μ g as measured by the LAL method.

Human PGF is a member of the VEGF family, specifically involved in angiogenesis and vasculogenesis during pregnancy. PGF is primarily secreted by the syncytiotrophoblast layer of the placenta and plays a crucial role in promoting blood vessel formation, which is essential for adequate placental and fetal development [1][2]. The protein exists in multiple isoforms, which arise from alternative splicing of its mRNA, leading to variations in its structure and function [2].

PGF interacts with specific receptors, including the VEGFR-1, which mediates its effects on endothelial cells and contributes to regulating placental blood flow [3][4]. The expression of PGF is influenced by various factors, including hypoxia, which can lead to increased levels of this growth factor in the placenta. This response is critical for adapting to the changing oxygen levels during pregnancy [5]. Moreover, PGF has been implicated in the pathophysiology of several pregnancy-related complications, such as preeclampsia, where an imbalance in the PGF and sFlt-1 (soluble fms-like tyrosine kinase-1) ratio is observed [5][4].

PGF is also involved in immune regulation within the placenta. It can modulate maternal immune responses, which is vital for maintaining a healthy pregnancy and preventing fetal rejection [6]. Furthermore, PGF's involvement in the placental secretome highlights its potential as a biomarker for pregnancy complications, as alterations in its levels can indicate placental dysfunction [7][8].

References:

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Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.