



Recombinant Human Placenta Growth Factor-1-His



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	300-018
Size:	20 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	<i>Pgf</i>
Synonyms:	PIGF, Placenta Growth Factor

Human Placenta Growth Factor-1 (PIGF-1), a 19 kDa protein consisting of 131 amino acid residues and fused to a C-terminal His-tag (6x His), is produced as a homodimer. Human Placenta Growth Factor (PIGF) is a polypeptide growth factor and a member of the platelet-derived growth factor family but more related to vascular endothelial growth factor (VEGF). PIGF-1 acts only as a very weak mitogen for some endothelial cell types and as a potent chemoattractant for monocytes. The physiological function in vivo is still controversial. In several reports it was shown not to be a potent mitogen for endothelial cells and not angiogenic in vivo by using different assays. Very recently it was shown by one investigator, that PIGF-1 from cell culture supernatants was angiogenic in the CAM assay and in the rabbit cornea assay. At least one high-affinity receptor for PIGF (FLT-1 or VEGF-R1) has been demonstrated in different primary cell types (e.g. human umbilical vein endothelial cells and monocytes) but PIGF does not bind to KDR/flk-1. Two different proteins can be generated by differential splicing of the human PIGF gene: PIGF-1 (131 aa native chain) and PIGF-2 (152 aa native chain). Both mitogens are secretable proteins, but PIGF-2 can bind to heparin with high affinity. PIGF-1 is a homodimer, but preparations of PIGF show some heterogeneity on SDS gels depending of the varying degrees of glycosylation. All dimeric forms possess a similar biological profile. There is good evidence that heterodimeric molecules between VEGF and PIGF exists and that they are biological active. Different cells and tissues (e.g. placenta) express PIGF-1 and PIGF-2 at different rates. A much related protein of PIGF is VEGF with about 53% homology and VEGF-B with similar biological activities.

References

1. DiPalma, T. et al. (1996) Mamm. Genome 7:6.
2. Cao, Y. et al. (1997) Biochem. Biophys. Res. Commun. 235:493.
3. Ferrara, N. et al. (1997) Endocrin. Rev. 18:4
4. Kim KJ et al, Exp Mol Med 44:10-9, 2012
5. De Falco S, Exp Mol Med 44:1-9, 2012

Sequence

LPAVPPQQWALSAGNGSSEVEVVPFQEVWGRSYCRALERLVDVVSEYPSEVE
HMFSPSCVSLLRCTGCCGDNELHCVPVETANVTMQLLKRSGDRPSYVELTF
SQHVRCECRPLREKMKPERCGDAVPRRTRHHHHHH

Database References

Protein RefSeq:	NP_001193941.1
Uniprot ID:	P49763
mRNA RefSeq:	NM_001207012.1

Product Specifications

Expressed in	Insect cells
Purity	> 95% by SDS-PAGE & silver stain
Buffer	50 mM acetic acid
Stabilizer	BSA
Formulation	lyophilized
Length (aa):	139
MW:	~ 36.5 kDa (Dimer)
Result by N-terminal sequencing	LPAVPPQQWA

Stability: The lyophilized human PIGF-1, though stable at room temperature, is best stored in working aliquots at -20°C to -70°C .

Reconstitution: The PIGF-1 is supplied in lyophilized form with carrier-protein (BSA) and can be reconstituted with 50mM acetic acid or PBS/water. This solution can be diluted into other buffered solutions or stored frozen for future use.



AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: Not tested so far.



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Handling/Applications

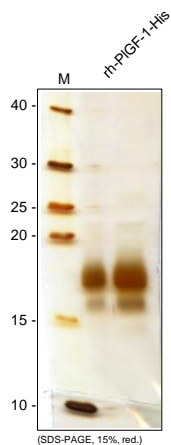


Fig. 1: SDS-PAGE analysis of recombinant human PIGF-1-His. Samples were loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Silver stain.