



# Recombinant Human Placenta Growth Factor-1-His



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no:</b>	<b>300-017S</b>
<b>Size:</b>	2 µg
<b>Lot. No.:</b>	According to product label
<b>Country of origin:</b>	Germany

## Scientific Background

<b>Gene:</b>	<i>Pgf</i>
<b>Synonyms:</b>	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 exist and that they are biologically 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

<b>Protein RefSeq:</b>	NP_001193941.1
<b>Uniprot ID:</b>	P49763
<b>mRNA RefSeq:</b>	NM_001207012.1

## Product Specifications

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

**Stability:** The lyophilized human PIGF-1, though stable at room temperature, is best stored in working aliquots at  $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$ .

**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.



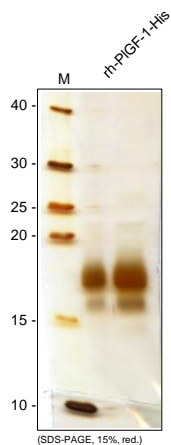
**AVOID REPEATED FREEZE AND THAW CYCLES!**

**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.