

Active Recombinant human VEGF/PIGF

Cat. No. VEGFA&PIGF-28H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant human VEGF/PIGF, expressed in E. coli. DNA sequences encoding the mature 165 amino acid residue variant of VEGF (Leung, P.W. et al., 1989, Science 246:1306) and the mature 129 amino acid residue form of placenta growth factor (PIGF) (Maglione, D. et al., 1993, Oncogene 8:925 - 931) were expressed in E. coli. Recombinant VEGF/PIGF heterodimer was dimerized in vitro.
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Species	Human
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Source	E.coli
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Description	The disulfidelinked homodimeric proteins vascular endothelial growth factor (VEGF) and placenta growth factor (PIGF) are both members of the VEGF family of growth factors. VEGF and PIGF proteins share primary structural as well as limited amino acid sequence homology with the A and B chains of PDGF. All eight cysteine residues involved in intra and interchain disulfides are conserved among these growth factors. In their PDGF like regions, VEGF and PIGF also share approximately 53% amino acid sequence similarity. E. coli expressed monomers of PIGF and VEGF can be refolded in vitro to form P IGF/VEGF heterodimers. The purified recombinant VEGF/PIGF heterodimers and VEGF homodimers have potent mitogenic effects on endothelial cells. However, VEGF/PIGF heterodimers display approximately 50 fold less mitogenic activity than VEGF homodimers. In contrast, PIGF homodimers have little or no mitogenic effect on endothelial cells. The presence of natural VEGF/PIGF heterodimers in the conditioned media of a number of human tumor cell lines has been demonstrated using a VEGF/PIGF heterodimer specific ELISA.
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 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

Form	Lyophilized from a 0.2 µm filtered solution in PBS containing 50 µg of bovine serum albumin per 1 µg of cytokine.
Bio-activity	Measured by its ability to stimulate 3H-thymidine incorporation in HUVE cells (Conn, G. et al., 1990, <i>Pr centigrade. Natl. Acad. Sci. USA</i> 87:1323 - 1327). The ED50 for this effect is typically 100 - 200 ng/mL.
Molecular Mass	The disulfide-linked heterodimeric VEGF/PlGF has a predicted molecular mass of approximately 28 kDa.
Endotoxin	< 1.0 eu per 1 µg of the cytokine as determined by the Lal
Purity	>97%, as determined by SDS-PAGE and visualized by silver stain
Usage	FOR RESEARCH USE ONLY
Quality Control Test	Lyophilized samples are stable for up to six months at -20 centigrade to -70 centigrade. Upon reconstitution, this cytokine, in the presence of a carrier protein, can be stored under sterile conditions at 2 - 8 centigrade for one month or at -20 centigrade to -70 centigrade in a manual defrost freezer for three months without detectable loss of activity.
Reconstitution	It is recommended that sterile PBS containing at least 0.1% human serum albumin or bovine serum albumin be added to the vial to prepare a st centigradek solution of no less than 5 µg/mL.
Warning	Avoid repeated freeze-thaw cycles.

GENE INFORMATION

Gene Name	VEGFA vascular endothelial growth factor A [Homo sapiens]; PlGF
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	phosphatidylinositol glycan anchor biosynthesis, class F [Homo sapiens]
Official Symbol	VEGFA; PIGF
Synonyms	VEGFA; vascular endothelial growth factor A; vascular endothelial growth factor, VEGF; VEGF A; VPF; vascular permeability factor; VEGF; MVCD1; MGC70609; PIGF; phosphatidylinositol glycan anchor biosynthesis, class F; phosphatidylinositol glycan, class F; phosphatidylinositol-glycan biosynthesis class F protein; PIG-F; GPI11 homolog; MGC32646; MGC33136;
Gene ID	7422; 5281
mRNA Refseq	NM_001025366; NM_002643
Protein Refseq	NP_001020537; NP_002634
MIM	192240; 600153
UniProt ID	P15692; Q07326
Chromosome Location	6p12; 2p21-p16
Pathway	Bladder cancer, organism-specific biosystem; Bladder cancer, conserved biosystem; Cytokine-cytokine receptor interaction, organism-specific biosystem; Cytokine-cytokine receptor interaction, conserved biosystem; Endochondral Ossification, organism-specific biosystem; Focal adhesion, organism-specific biosystem; Focal adhesion, conserved biosystem;
Function	cell surface binding; chemoattractant activity; cytokine activity; cytokine activity; extracellular matrix binding; fibronectin binding; growth factor activity; growth factor

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activity; heparin binding; heparin binding; platelet-derived growth factor receptor binding; protein binding; protein heterodimerization activity; protein homodimerization activity; receptor agonist activity; vascular endothelial growth factor receptor 1 binding; vascular endothelial growth factor receptor 2 binding; vascular endothelial growth factor receptor binding; ethanolaminephosphotransferase activity;

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