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Recombinant Human $VEGF_{121}$

Description: Human Vascular Endothelial Growth $Factor_{121}$ ($VEGF_{121}$), a 18 kDa protein consisting of 121 amino acid residues is produced as a homodimer. VEGF is a polypeptide growth factor and a member of the platelet-derived growth factor family. It is a specific mitogen for vascular endothelial cells and a strong angiogenic factor *in vivo*. Two high-affinity tyrosine kinase receptors for $VEGF_{121}$ have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (KDR). Consistent with the endothelial cell-specific action of $VEGF_{121}$, expression of both receptor genes has been found predominantly but not exclusively on endothelial cells. Expression of VEGFR-1 was also found on human monocytes, neutrophils (PMNs), bovine brain pericytes and villous and extravillous trophoblasts. In addition to its action as a mitogen it is a potent vascular permeability factor (VPF) *in vivo*, and a chemoattractant molecule for monocytes and endothelial cells. Five different proteins are generated by differential splicing: $VEGF_{121}$, $VEGF_{145}$, $VEGF_{165}$, $VEGF_{189}$ and $VEGF_{206}$. The most abundant form is $VEGF_{165}$. Whereas $VEGF_{121}$ and $VEGF_{165}$ are secreted proteins, $VEGF_{145}$, $VEGF_{189}$ and $VEGF_{206}$ are strongly cell-associated. The isoforms $VEGF_{145}$, $VEGF_{165}$ and $VEGF_{189}$ bind to heparin with high affinity. $VEGF_{121}$ is apparently a homo-dimer, but preparations of VEGF show some heterogeneity on SDS gels depending on the secretion of different forms and the varying degrees of glycosylation. All dimeric forms posses' similar biological activities but the bioavailability is very different. There is good evidence that heterodimeric molecules between the different isoforms exist and that different cells and tissues express different VEGF isoforms. The other members of this increasing growth factor family are VEGF-B, -C, -D, -E and PlGF.

Source:	Insect cells
Molecular Weight:	~36 kDa
Purity:	> 95%, by SDS-PAGE and visualised by silver stain
Endotoxin level:	< 0.1 ng per ug of VEGF
Stabilizer:	none
Buffer:	50 mM acetic acid
Formulation:	lyophilised

Biological Activity: The ED_{50} for stimulation of ^{3}H-thymidine incorporation and cell proliferation by human umbilical vein endothelial cells for $VEGF_{121}$ has been determined to be in the range of 1-4 ng/ml.

Reconstitution: The lyophilized $VEGF_{121}$ should be reconstituted in 50 mM acetic acid to a concentration not lower than 50 µg/ml. It can be further diluted in water or medium containing at least 0.1% human or bovine serum albumin.

Stability: Lyophilised samples are stable for greater than six months at –20°C to –70°C. Reconstituted $VEGF_{121}$ should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles!**

Usage: $VEGF_{121}$ is offered for research use. Not for drug use. **Not for human use!**

Catalogue number:	300-031S	**Size:**	2 µg
		Range:	1-10 ng/ml

Literature: [Breier et al., Dev 114:521, 1992; Fiebig et al., Eur J Biochem 211:19, 1993; Flamme et al., Dev Biol 162:699, 1995; Kremer at al., Cancer Res 57:3852, 1997]

**** please note: always centrifuge vials before opening ****