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Recombinant Human VEGF₁₂₁

Description: Human Vascular Endothelial Growth Factor₁₂₁ (VEGF₁₂₁), 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 VEGF₁₂₁ have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (KDR). Consistent with the endothelial cell-specific action of VEGF₁₂₁, 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: VEGF₁₂₁, VEGF₁₄₅, VEGF₁₆₅, VEGF₁₈₉ and VEGF₂₀₆. The most abundant form is VEGF₁₆₅. Whereas VEGF₁₂₁ and VEGF₁₆₅ are secreted proteins, VEGF₁₄₅, VEGF₁₈₉ and VEGF₂₀₆ are strongly cell-associated. The isoforms VEGF₁₄₅, VEGF₁₆₅ and VEGF₁₈₉ bind to heparin with high affinity. VEGF₁₂₁ 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 possess 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:	E. coli
Molecular Weight:	28.4 kDa
Purity:	> 98% by SDS-PAGE and Silver staining
Endotoxin level:	< 0.1 ng per µg of VEGF ₁₂₁
Stabilizer:	none
Buffer:	50mM acetic acid
Formulation:	lyophilized

Biological Activity: The ED₅₀ for stimulation of ³H-thymidine incorporation and cell proliferation by human umbilical vein endothelial cells for VEGF₁₂₁ has been determined to be in the range of 1-4 ng/ml.

Reconstitution: The lyophilised VEGF₁₂₁ is soluble in water and most aqueous buffers. The lyophilised VEGF₁₂₁ should be reconstituted in PBS or medium containing at least 0.1% human or bovine serum albumin to a concentration not lower than 50 µg/ml.

Stability: Lyophilised samples are stable for greater than six months at -20°C to -70°C. Reconstituted VEGF₁₂₁ should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles!**

Usage: VEGF₁₂₁ is offered for research use. Not for drug use. **Not for human use!**

Catalogue number: 300-071

Size: 5 µg

Range: 0.1-30 ng/ml

****please note: always centrifuge product before opening Vial****