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Recombinant Human VEGF₁₆₅

Description: Human Vascular Endothelial Growth Factor VEGF₁₆₅, a 23 kDa protein consisting of 165 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 VEGF₁₆₅ have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (KDR). Consistent with the endothelial cell-specific action of VEGF₁₆₅, 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*. VEGF₁₆₅ is also a chemoattractant molecule for monocytes and endothelial cells. 5 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. VEGF₁₆₅ is apparently a homo-dimer, but preparations of VEGF₁₆₅ show some heterogeneity on SDS gels, depending on the secretion of different glycosylation patterns. All dimeric forms have similar biological activities but their bio-availability is very different. There is good evidence that heterodimeric molecules between the different isoforms also exists and that different cells and tissues express different VEGF isoforms. The other members of this increasing growth factor family are VEGF-B, -C, -D and -E. Another member is the Placenta growth factor PlGF.

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|--------------------------|-------------------------------------|
| Source: | E. coli |
| Molecular Weight: | 38.2 kDa |
| Purity: | > 98% by SDS-PAGE and HPLC analyses |
| Endotoxin level: | < 0.1 ng per µg of VEGF |
| Stabilizer: | none |
| Buffer: | 50 mM acetic acid |
| Formulation: | lyophilized |

Biologically Activity: The ED₅₀ for stimulation of ³H-thymidine incorporation and cell proliferation by human umbilical vein endothelial cells for VEGF₁₆₅ has been determined to be in the range of 1-2 ng/ml.

Reconstitution: The lyophilised VEGF₁₆₅ is soluble in water and most aqueous buffers. The lyophilised VEGF₁₆₅ 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 VEGF₁₆₅ should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles!**

Usage: VEGF₁₆₅ is offered for research use. Not for drug use. **Not for human use!**

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| Catalogue number: 300-075 | Size: 5 µg |
| | Range: 0.1-30 ng/ml |

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