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Recombinant Murine VEGF₁₆₄

Description: Mouse Vascular Endothelial Growth Factor₁₆₄ (VEGF₁₆₄), a 24 kDa protein consisting of 164 amino acid residues, is produced as a homodimer. VEGF₁₆₄ 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 VEGF₁₆₄ have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (Flk-1). Consistent with the endothelial cell-specific action of VEGF₁₆₄, 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 is also a chemoattractant for monocytes and endothelial cells. At least three different proteins are generated by differential splicing of the mouse VEGF gene: VEGF₁₂₀, VEGF₁₆₄ and VEGF₁₈₈. The most abundant form is VEGF₁₆₄. Whereas VEGF₁₂₀ and VEGF₁₆₄ are secreted proteins, VEGF₁₈₈ is strongly cell-associated. In addition, the isoforms VEGF₁₆₄ and VEGF₁₈₈ bind to heparin with high affinity. VEGF is apparently a homodimer, but preparations of VEGF show some heterogeneity on SDS gels depending of the secretion of different forms and the varying degrees of glycosylation. All dimeric forms possess similar biological activities. There is evidence that heterodimeric molecules between the different isoforms exists and that different cells and tissues express different VEGF isoforms. A related protein of VEGF is placenta growth factor (PlGF) with about 53% homology and VEGF-B with similar biological activities.

Source:	Insect cells
Molecular Weight:	48 kDa
Purity:	> 95%, by SDS-PAGE and visualised by silver stain
Endotoxin level:	< 0.1 ng/μg of VEGF
Stabilizer:	none
Buffer:	50 mM acetic acid
Formulation:	lyophilised

Biologically Activity: The ED₅₀ for stimulation of ³H-thymidine incorporation and cell proliferation by human umbilical vein endothelial cells for VEGF₁₆₄ has been determined to be in the range of 1-2 ng/ml.

Reconstitution: The lyophilised VEGF₁₆₄ is soluble in water and most aqueous buffers. The lyophilised VEGF₁₆₄ 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 VEGF₁₆₄ should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles!**

Usage: VEGF₁₆₄ is offered for research use. Not for drug use. **Not for human use!**

Catalogue number:	M30-001S	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 et al., Cancer Res 57:3852, 1997]

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