

Human VEGF₁₄₅

Synonyms: vascular endothelial growth factor A, VEGFA, VPF, VEGF, MVCD1

PLEASE NOTE: ALWAYS CENTRIFUGE VIAL BEFORE OPENING

Size	Order #	Lot #	Expiry Date
5 µg	2003.950.005		
20 µg	2003.950.020		

Please enquire for bulk quantities and other vial sizes

Description

A vascular endothelial growth factor (VEGF) mRNA species containing exons 1–6 and 8 of the VEGF gene was found to be expressed as a major VEGF mRNA form in several cell lines derived from carcinomas of the female reproductive system. This mRNA is predicted to encode a VEGF form of 145 amino acids (VEGF₁₄₅). VEGF₁₄₅ produced in insect cells is a homodimeric, 20.5 kDa protein belonging to the VEGF-A family. Recombinant VEGF₁₄₅ induced the proliferation of vascular endothelial cells and promoted angiogenesis in vivo. VEGF₁₄₅ was compared with previously characterized VEGF species with respect to interaction with heparinlike molecules, cellular distribution, VEGF receptor recognition, and extracellular matrix (ECM) binding ability. VEGF₁₄₅ shares with VEGF₁₆₅ the ability to bind to the KDR/flk-1 receptor of endothelial cells. It also binds to heparin with an affinity similar to that of VEGF₁₆₅. However, VEGF₁₄₅ does not bind to two additional endothelial cell surface receptors that are recognized by VEGF₁₆₅ but not by VEGF₁₂₁. VEGF₁₄₅ is secreted from producing cells as are VEGF₁₂₁ and VEGF₁₆₅. However, VEGF₁₂₁ and VEGF₁₆₅ do not bind to the ECM produced by corneal endothelial cells, whereas VEGF₁₄₅ binds efficiently to this ECM. Basic fibroblast growth factor (bFGF)-depleted ECM containing bound VEGF₁₄₅ induces proliferation of endothelial cells, indicating that the bound VEGF₁₄₅ is active. The mechanism by which VEGF₁₄₅ binds to the ECM differs from that of bFGF. Digestion of the ECM by heparinase inhibited the binding of bFGF to the ECM and released prebound bFGF, whereas the binding of VEGF₁₄₅ was not affected by heparinase digestion. It therefore seems that VEGF₁₄₅ possesses a unique combination of biological properties distinct from those of previously characterized VEGF species. The other members of this increasing growth factor family are VEGF-B, -C, -D and -E. Another member is the Placenta growth factor PlGF.

- **Source** *E. Coli*
- **Purity** ≥ 95 % (SDS-PAGE, silver stained)
- **Endotoxin level** < 0.1 ng per µg of human VEGF₁₄₅

Biological Activity

The ED₅₀ for stimulation of cell proliferation in human umbilical vein endothelial cells by VEGF₁₄₅ has been determined to be in the range of 5-10 ng/ml.

Reconstitution

The lyophilized VEGF₁₄₅ should be reconstituted in water to a concentration not lower than 50 µg/ml. For long term storage we recommend to add at least 0.1% human or bovine serum albumin.

Amino Acid Sequence

APMAEGGGQN HHEVVKFMDV YQRSYCHPIE TLVDIFQEYP DEIEYIFKPS CVPLMRCGGC CNDEGLECVP
 TEESNITMQI MRIKPHQGQH IGEMSFLQHN KCECRPKKDR ARQEKKSVRG KGKGQKRKRK KSRYKSWVC
 DKPRR

Usage: For research use only. Not for use in diagnostic or therapeutic procedures. Not for human use.

*The Buffer may vary depending on the Lot #. Please contact our technical support if you have specific requirements.

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