RELIA*Tech* GmbH
Lindener Str. 15
38300 Wolfenbüttel
Germany

Tel.: +49 5331 8586 987
Fax: +49 5331 8586 989
Email: info@reliatech.de
web: www.reliatech.de

Recombinant Human $VEGF_{145}$

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 ($VEGF_{145}$). $VEGF_{145}$ produced in insect cells is a homodimeric, 20,5 kDa protein belonging to the VEGF-A family.
Recombinant $VEGF_{145}$ induced the proliferation of vascular endothelial cells and promoted angiogenesis *in vivo*. $VEGF_{145}$ 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. $VEGF_{145}$ shares with $VEGF_{165}$ 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 $VEGF_{165}$. However, $VEGF_{145}$ does not bind to two additional endothelial cell surface receptors that are recognized by $VEGF_{165}$ but not by $VEGF_{121}$. $VEGF_{145}$ is secreted from producing cells as are $VEGF_{121}$ and $VEGF_{165}$. However, $VEGF_{121}$ and $VEGF_{165}$ do not bind to the ECM produced by corneal endothelial cells, whereas $VEGF_{145}$ binds efficiently to this ECM. Basic fibroblast growth factor (bFGF)-depleted ECM containing bound $VEGF_{145}$ induces proliferation of endothelial cells, indicating that the bound $VEGF_{145}$ is active. The mechanism by which $VEGF_{145}$ 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 $VEGF_{145}$ was not affected by heparinase digestion. It therefore seems that $VEGF_{145}$ 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
Molecular Weight:	~32 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

Biologically Activity: The ED_{50} for stimulation of cell proliferation of human umbilical vein endothelial cells for $VEGF_{145}$ has been determined to be in the range of 10 ng/ml.

Reconstitution: The lyophilised $VEGF_{145}$ is soluble in water and most aqueous buffers. The lyophilised $VEGF_{145}$ 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 $VEGF_{145}$ should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles!**

Usage: $VEGF_{145}$ is offered for research use. Not for drug use. **Not for human use!**

Catalogue number: 300-033S

Size: 2 µg
Range: 5-40 ng/ml

Literature: [Poltorak et al., JBC 272:7151, 1997]

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