

DA3514S**Recombinant Human VEGF165****Alternate names:**

VEGF, VEGFA, VPF, Vascular endothelial growth factor A, Vascular permeability factor

Quantity:

2 µg

Background:

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 tropho-blasts. 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.

Uniprot ID:[P15692](#)**NCBI:**[NP_001020537.2](#)**GeneID:**[7422](#)**Species:**

Human

Source:

Insect cells

Format:**State:** Lyophilized purified protein**Purity:** >90% by SDS-PAGE and visualised by silver stain**Buffer System:** 50 mM Acetic Acid, without stabilizer**Endotoxin Level:** < 0.1 ng per µg of VEGF**Reconstitution:** The lyophilized VEGF165 should be restored in 50 mM Acetic Acid 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.**Description:**

Recombinant Human Vascular Endothelial Growth Factor165.

Result by N-terminal sequencing: APMAEGG**Biological Activity:** The ED50 for stimulation of cell proliferation by human umbilical vein endothelial cells for VEGF165 has been determined to be in the range of 1-4

ng/ml.

Molecular weight: 45 kDa (165 aa)

Storage:

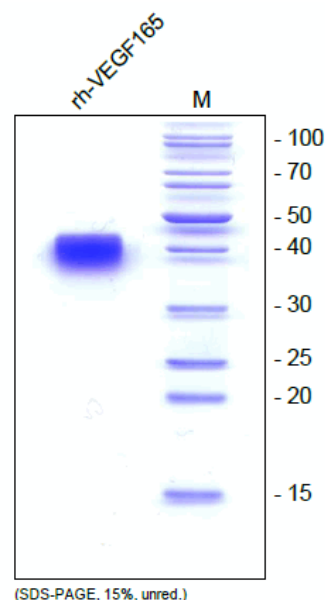
Store lyophilized at 2-8°C for 6 months or at -20°C long term.
After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Breier G, Albrecht U, Sterrer S, Risau W. Expression of vascular endothelial growth factor during embryonic angiogenesis and endothelial cell differentiation. *Development*. 1992 Feb;114(2):521-32. PubMed PMID: 1592003.
2. Fiebich BL, Jäger B, Schöllmann C, Weindel K, Wilting J, Kochs G, et al. Synthesis and assembly of functionally active human vascular endothelial growth factor homodimers in insect cells. *Eur J Biochem*. 1993 Jan 15;211(1-2):19-26. PubMed PMID: 7678805.
3. Flamme et al., *Dev Biol* 162:699, 1995.
4. Kremer C, Breier G, Risau W, Plate KH. Up-regulation of flk-1/vascular endothelial growth factor receptor 2 by its ligand in a cerebral slice culture system. *Cancer Res*. 1997 Sep 1;57(17):3852-9. PubMed PMID: 9288799.

Pictures:

SDS-PAGE analysis of recombinant human VEGF165. Sample was loaded in 15% SDS-polyacrylamide gel under non-reducing condition and stained with Coomassie blue.



VEGF165-induced proliferation of HUVE cells. HUVECs were stimulated with increasing amounts of human VEGF165.

