

AR26016PU-S

Mouse VEGF-A (VEGF188) - Purified

Alternate names:

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

Quantity:

2 µg

Background:

Mouse Vascular Endothelial Growth Factor188 (VEGF188), a 22,1 kDa protein consisting of 188 amino acid residues, is produced as a homodimer. VEGF188 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 VEGF188 have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (Flk-1). Consistent with the endothelial cell-specific action of VEGF188, 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 chemo attractant for monocytes and endothelial cells. At least four different proteins are generated by differential splicing of the mouse VEGF gene: VEGF120, VEGF144, VEGF164 and VEGF188. The most abundant form is VEGF164. Whereas VEGF120, VEGF144, 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.

Uniprot ID:

[Q00731](#)

NCBI:

[NP_001020421](#)

GeneID:

[22339](#)

Species:

Mouse

Source:

E. coli

Format:

State: Lyophilized protein

Purity: >95% by SDS-PAGE and silver stain

Buffer System: 50 mM Acetic Acid

Stabilizers: None

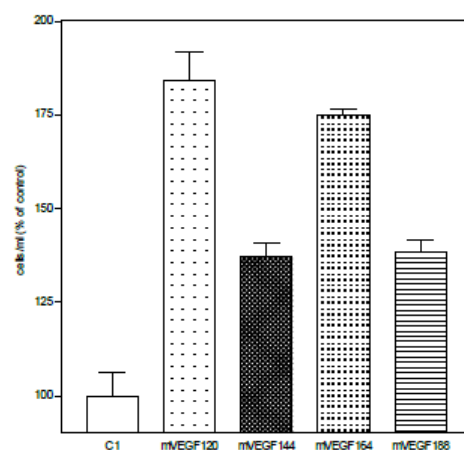
Endotoxin Level: < 0.1 ng/µg of VEGF188

Reconstitution: The lyophilized VEGF188 should be reconstituted in 50mM Acetic Acid or medium containing at least 0.1% Human or BSA to a concentration not lower than 50 µg/ml.

Description:	Recombinant Murine Vascular Endothelial Growth Factor188. Result by N-terminal sequencing: APTTEGE AA Sequence: APTTEGEQKSHEVIKFMVDVYQRSYCRPIETLVDIFQEYPDEIEYIFKPCSCVPLMRCAGCCNDEALECVPTSE SNITM QIMRIKPHQSQHIGEMSFLQHSRCECRPKKDRTKPEKKSVRGKGKGQKRKKSRFKSWSVHCEPCSERRKHL FVQDP QTCKCCKNTDSRCKARQLELNERTCRCDKPRR Biological Activity: Determined by the dose-dependent stimulation of the proliferation of human umbilical vein endothelial cells (HUVEC) using a concentration range of 2-20 ng/ml. Molecular weight: 44.2 kDa
Add. Information:	Protein RefSeq: NP 001020421 mRNA RefSeq: NM 001025250
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:	- 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. - 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. - Flamme et al., Dev Biol 162:699, 1995. - 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. - Kanthou C, Dachs GU, Lefley DV, Steele AJ, Coralli-Foxon C, Harris S, et al. Tumour cells expressing single VEGF isoforms display distinct growth, survival and migration characteristics. PLoS One. 2014 Aug 13;9(8):e104015. doi: 10.1371/journal.pone.0104015. eCollection 2014. PubMed PMID: 25119572.

Pictures:

Stimulation of cell proliferation in primary human umbilical vein endothelial cells (HUVEC) by recombinant mouse VEGF-A isoforms. Values are the means ($\pm$ SD) of triplicate determinations and expressed as percentage of control.



SDS-PAGE analysis of recombinant Mouse VEGF-A isoforms produced in *E. coli*. Samples were loaded under non-reducing conditions in 15% SDS-polyacrylamide gel and stained with Silver stain.

