

AR31053PU-S

Rat VEGF-A (VEGF120) - Purified

Alternate names:

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

Quantity:

2 µg

Background:

Rat Vascular Endothelial Growth Factor120 (VEGF120), a 14.1 kDa protein consisting of 120 amino acid residues, is produced as a homodimer. VEGF120 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 VEGF120 have been identified, VEGFR-1 (FLT-1), and VEGFR-2 (Flk-1). Consistent with the endothelial cell-specific action of VEGF120, 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. All dimeric forms possess similar biological activities. A related protein of VEGF is placenta growth factor (PlGF) with about 53% homology and VEGF-B with similar biological activities.

The full ORF of native rat VEGF120 (Ala27-Arg146) was cloned from total RNA of rat sinusoidal endothelial cells using standard protocols.

Uniprot ID:

[P16612](#)

NCBI:

[NP_114024.2](#)

GeneID:

[83785](#)

Species:

Rat

Source:

E. coli

Format:

State: Lyophilized freeze dried protein

Purity: >95%

Buffer System: PBS without stabilizer

Endotoxin Level: < 0.1 ng/µg of Rat VEGF120

Reconstitution: The lyophilized VEGF120 should be restored in ddH₂O to a concentration not lower than 50 µg/ml.

Description:

Recombinant Rat Vascular Endothelial Growth Factor 120

AA Sequence:

APTTEGEQKAHEVVKFMDVYQRSYCRPIETLVDIFQEYPDEIEYIFKPSCVPLMRCAGCCNDEALECVPTSE
SNVTM

QIMRIKPHQSQHIGEMSFLQHSRCECRPKKDRTPKPKCDKPRR

Result by N-terminal sequencing: APTTEGEQKAH

Biological Activity: Determined by the dose-dependent stimulation of the

proliferation of human umbilical vein endothelial cells (HUVEC) using a concentration range of 2-10 ng/ml.

Molecular weight: 14.02 kDa (120 amino acids)

Storage:

Lyophilized samples are stable for greater than six months at -20°C to -70°C .
Reconstituted VEGF120 should be stored in working aliquots at -20°C .
Avoid repeated freeze-thaw cycles!

General Readings:

1. Breier et al., Dev 114:521, 1992
2. Fiebig et al., Eur J Biochem 211:19, 1993
3. Flamme et al., Dev Biol 162:699, 1995
4. Kremer et al., Cancer Res 57:3852, 1997

Pictures:

SDS-PAGE analysis of recombinant Rat VEGF120: Sample was loaded in 15% SDS-polyacrylamide gel under non-reducing conditions and stained with Silver stain.

