

Recombinant Human VEGF 121 Protein, aa 207-327

Cat. No. VEGF121-44H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human VEGF 121 Protein (Ala207-Arg327, with an N-terminal Met & Pro208-Arg327) without tag was expressed in E. coli. Disulfide-linked homodimer.
Species	Human
Source	E.coli
ProteinLength	Ala207-Arg327
Description	This gene is a member of the PDGF/VEGF growth factor family. It encodes a heparin-binding protein, which exists as a disulfide-linked homodimer. This growth factor induces proliferation and migration of vascular endothelial cells, and is essential for both physiological and pathological angiogenesis. Disruption of this gene in mice resulted in abnormal embryonic blood vessel formation. This gene is upregulated in many known tumors and its expression is correlated with tumor stage and progression. Elevated levels of this protein are found in patients with POEMS syndrome, also known as Crow-Fukase syndrome. Allelic variants of this gene have been associated with microvascular complications of diabetes 1 (MVCD1) and atherosclerosis. Alternatively spliced transcript variants encoding different isoforms have been described. There is also evidence for alternative translation initiation from upstream non-AUG (CUG) codons resulting in additional isoforms. A recent study showed that a C-terminally extended isoform is produced by use of an alternative in-frame translation termination codon via a stop codon readthrough mechanism, and that this isoform is antiangiogenic. Expression of some isoforms derived from the

 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

AUG start codon is regulated by a small upstream open reading frame, which is located within an internal ribosome entry site. The levels of VEGF are increased during infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), thus promoting inflammation by facilitating recruitment of inflammatory cells, and by increasing the level of angiopoietin II (Ang II), one of two products of the SARS-CoV-2 binding target, angiotensin-converting enzyme 2 (ACE2). In turn, Ang II facilitates the elevation of VEGF, thus forming a vicious cycle in the release of inflammatory cytokines.

Bio-activity	Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells. The ED50 for this effect is 1.00-8.00 ng/mL.
Molecular Mass	14 kDa (monomer)
Endotoxin	<0.01 EU/μg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
N-terminal Sequence Analysis	Met & Pro208
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 centigrade as supplied. 1 month, 2 to 8 centigrade under sterile conditions after reconstitution. 3 months, -20 to -70 centigrade under sterile conditions after reconstitution.
Storage Buffer	Lyophilized from a 0.2 μm filtered solution in HCl with BSA as a carrier protein.
Shipping	The product is shipped at ambient temperature.
Reconstitution	Reconstitute at 100 μg/mL in sterile 4 mM HCl.

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References

1. Leung, D.W. et al. (1989) Science 246:1306.
2. Keck, P.J. et al. (1989) Science 246:1309.
3. Byrne, A.M. et al. (2005) J. Cell. Mol. Med. 9:777.

GENE INFORMATION

Gene Name	VEGFA vascular endothelial growth factor A [Homo sapiens (human)]
Official Symbol	VEGFA
Synonyms	VEGFA; vascular endothelial growth factor A; VPF; VEGF; MVCD1; L-VEGF; vascular endothelial growth factor A, long form; vascular endothelial growth factor A121; vascular endothelial growth factor A165; vascular permeability factor
Gene ID	7422
mRNA Refseq	NM_001025370
Protein Refseq	NP_001020541
MIM	192240
UniProt ID	A0A0A0MR

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