

Active Recombinant Human VEGFA Protein

Cat. No. VEGFA-106H Lot. No. (See product label)

SPECIFICATION

Product Overview The mature recombinant human VEGF protein (27-191aa) without tag was expressed in E. coli.

Species Human

Source E.coli

ProteinLength 27-191 a.a.

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 angiotensin 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 1-6 ng/mL. The specific activity of recombinant human VEGF is approximately 1.7 x 10³ U/μg, which is calibrated against recombinant human VEGF WHO Standard.

Molecular Mass

19.2 kDa

Product-Related Proteins

27-191

Storage

At -80 centigrade. Avoid repeated freeze-thaw cycles.

Storage Buffer

PBS

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;

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Gene ID	7422
mRNA Refseq	NM_001171626
Protein Refseq	NP_001165097
MIM	192240
UniProt ID	P15692

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