

## Active Recombinant Human VEGFA Protein, Biotinylated

Cat. No. VEGFA-172H Lot. No. (See product label)

### SPECIFICATION

<b>Product Overview</b>	Recombinant Human VEGFA(Ala27-Arg191) was expressed in Insect cells, Biotinylated.
<b>Species</b>	Human
<b>Source</b>	Insect Cells
<b>ProteinLength</b>	Ala27-Arg191
<b>Description</b>	<p>Vascular endothelial growth factor (VEGF or VEGF-A), also known as vascular permeability factor (VPF), is a potent mediator of both angiogenesis and vasculogenesis in the fetus and adult. It is a member of the PDGF family that is characterized by the presence of eight conserved cysteine residues and a cystine knot structure. Humans express two sets of alternatively spliced isoforms of 121, 145, 165, 183, 189, and 206 amino acids (aa) in length. Isoforms other than VEGF121 contain basic heparin-binding regions and are not freely diffusible. VEGF165 appears to be the most abundant and potent of the angiogenic isoform set, followed by VEGF121 and VEGF189. The anti-angiogenic or “b” set of isoforms is differentially spliced to contain five alternative amino acids at the C-terminus, and are the more highly expressed isoforms in normal adult tissue. VEGF165b, like VEGF121 but unlike most angiogenic isoforms, does not bind heparins and is therefore diffusible. Human VEGF165 shares 88% aa sequence identity with corresponding regions of mouse and rat, 96% with porcine, 95% with canine, and 93% with feline, equine and bovine VEGF165, respectively. In addition to alternatively spliced VEGF isoforms,</p>

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multiple fragments of VEGF can be generated by extracellular proteolysis. VEGFs bind the type I transmembrane receptor tyrosine kinases VEGF R1 (also called Flt-1) and VEGF R2 (Flk-1/KDR) on endothelial cells. Although VEGF affinity is highest for binding to VEGF R1, VEGF R2 appears to be the primary mediator of VEGF angiogenic activity. VEGF<sub>165</sub> binds the semaphorin receptor, Neuropilin-1 and promotes complex formation with VEGF R2. VEGF is required during embryogenesis to regulate the proliferation, migration, and survival of endothelial cells. In adults, VEGF functions mainly in wound healing and the female reproductive cycle. Pathologically, it is involved in tumor development and tumor vascular leakage. Circulating VEGF levels correlate with disease activity in autoimmune diseases such as rheumatoid arthritis, multiple sclerosis, and systemic lupus erythematosus. VEGF is induced by hypoxia and cytokines such as IL-1, IL-6, IL-8, Oncostatin M, and TNF-alpha.

**Form**

Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA with BSA as a carrier protein.

**Bio-activity**

Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells. Conn, G. et al. (1990) Proc. Natl. Acad. Sci. USA 87:1323. The ED<sub>50</sub> for this effect is 1-6 ng/mL.

**Molecular Mass**

19 kDa

**Endotoxin**

<0.10 EU per 1 µg of the protein by the LAL method.

**Purity**

>95%, by SDS-PAGE with silver staining

**Notes**

Structure / Form: Disulfide-linked homodimer; Biotinylated protein via sugars

**Storage**

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

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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

**Reconstitution** Reconstitute at 100 µg/mL in PBS.

**Conjugation** Biotin

## GENE INFORMATION

**Gene Name** VEGFA vascular endothelial growth factor A [ Homo sapiens ]

**Official Symbol** VEGFA

**Synonyms** VEGFA; vascular endothelial growth factor A; vascular endothelial growth factor , VEGF; VEGF A; VPF; vascular permeability factor; VEGF; MVCD1; MGC70609;

**Gene ID** 7422

**mRNA Refseq** NM\_001025366

**Protein Refseq** NP\_001020537

**UniProt ID** P15692

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