

Active Recombinant Human VEGFA Protein, Biotinylated

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

SPECIFICATION

Product Overview	Recombinant Human VEGFA(Ala27-Arg191) was expressed in Insect cells, Biotinylated.
Species	Human
Source	Insect Cells
ProteinLength	Ala27-Arg191
Description	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,

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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. VEGF₁₆₅ 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- α .

Form	Lyophilized from a 0.2 μ m 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 ₅₀ for this effect is 1-6 ng/mL.
Molecular Mass	19 kDa
Endotoxin	<0.10 EU per 1 μ g 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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