Active Recombinant Human VEGFA Protein, Pre-aliquoted

Cat. No. VEGFA-22H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human VEGFA Protein, Ala27-Arg191, was expressed in Insect cell.
Species	Human
Source	Insect Cells
ProteinLength	Ala27-Arg191
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 AUG start codon is regulated by a small upstream open reading frame, which is

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	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 is 1.0-6.0 ng/mL.
Molecular Mass	Predicted Molecular Mass:19.2 kDa (monomer) SDS-PAGE: 20-22 kDa, reducing conditions; 39-42 kDa, non-reducing conditions
N-terminal Sequence Analysis	Ala27
Endotoxin	< 0.10 EU/μg of the protein by the LAL method.
Purity	> 97% by SDS-PAGE under reducing conditions and visualized by silver stain.
Stability	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. • 6 months from date of receipt at room temperature as supplied. • 12 months from date of receipt at 2-8 centigrade as supplied. • 1 month at 2-8 centigrade under sterile conditions after reconstitution. • 3 months at -20 to -80 centigrade under sterile conditions after reconstitution.
Reconstitution	For a stock solution, reconstitute at 100 μg/mL in sterile PBS or at 100-500 μg/mL in sterile 4 mM HCl. For immediate use, simply roll Pre-aliquoted directly into cell culture medium.

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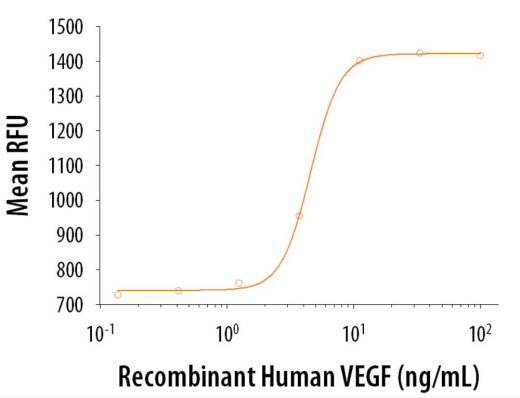
Shipping	The product is shipped at ambient temperature.

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; vascular endothelial growth factor A; vascular endothelial growth factor A121; vascular endothelial growth factor A165; vascular permeability factor
Gene ID	7422
mRNA Refseq	NM_001171626
Protein Refseq	NP_001165097
MIM	192240
UniProt ID	P15692
Bio-activity	

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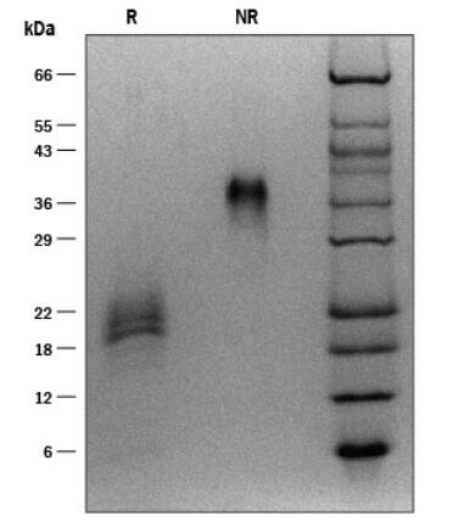
	VEGF165stimulates proliferation in HUVEC human umbilical endothelial cells. The ED50 is 1.0-6.0 ng/mL.
SDS-PAGE	 1 μg/mL of Recombinant Human VEGF165was resolved by SDS-PAGE with silver staining, under reducing (R) and non-reducing (NR) conditions, showing major bands at 20-22 kDa and 39-42 kDa, respectively. Multiple bands in the gel are due to glycosylation.

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