Active Recombinant Human VEGFA Protein (Ala27-Arg191), GMP Grade, Animal-Free

Cat. No. VEGF-06HG **Lot. No.** (See product label)

SPECIFICATION

Product Overview	GMP Recombinant Human VEGFA Protein, Ala27-Arg191, without tag was expressed in E. coli and produced using non-animal reagents in an animal-free laboratory under cGMP guidelines.
Species	Human
Source	E.coli
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-

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	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 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.
Form	Disulfide-linked homodimer
Bio-activity	Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells. The ED50 for this effect is 1.50-12.0 ng/mL. The specific activity of recombinant human VEGF165 is >8.0 × 10^5 units/mg, which is calibrated against the human VEGF165 WHO standard.
Molecular Mass	Predicted Molecular Mass: 19.2 kDa (monomer) SDS-PAGE: 19-21 kDa, under reducing conditions.
N-terminal Sequence Analysis	Met & Pro28
Endotoxin	< 0.01 EU/μg of the protein by the LAL method.
Purity	> 97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
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 Sodium Acetate.
Reconstitution	Reconstitute at 500 μg/mL in sterile deionized water.
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_001025366
Protein Refseq	NP_001020537
MIM	192240
UniProt ID	P15692

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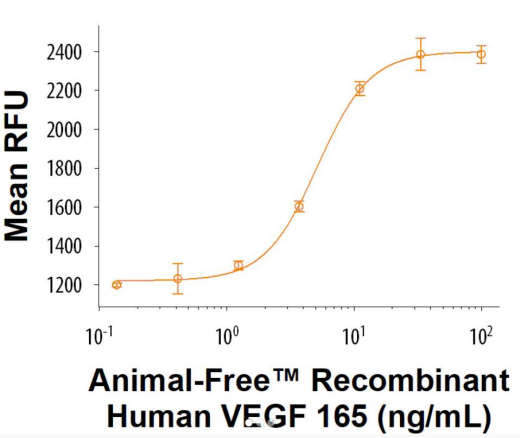
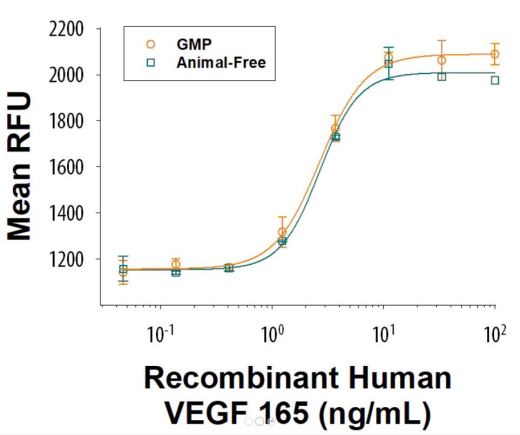
Bioactivity	
Bioactivity	

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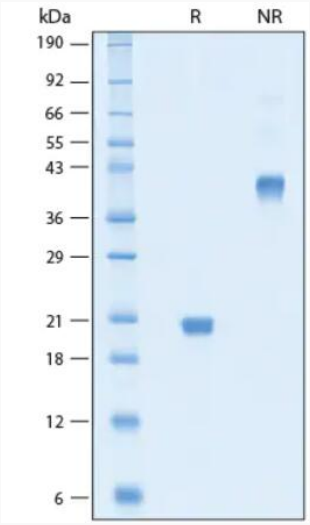
SDS-PAGE	

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