Recombinant Human VEGFA-165 Protein

Cat. No. VEGFA-39H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human VEGF 165 protein without tag was expressed in E. coli. Animal-free (ADCF) and carrier protein-free. Mass spectrometry: single species with expected mass. Recovery from stock vial: >95%
Species	Human
Source	E.coli
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

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	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.
Molecular Mass	38 kDa dimer, 19 kDa monomer
Endotoxin	<0.005 EU/μg protein (below level of detection)
Applications	Neural Differentiation; Midbrain Differentiation; Ventral forebrain Differentiation; Corpus organoid generation; Cholinergic-like neurons (ChLNs) Differentiation; Dopaminergic neurons Differentiation
Storage	Resuspend in water at >100 μg/mL, prepare single use aliquots, add carrier protein if desired and store frozen at -20 centigrade (short-term) or -80 centigrade (long-term)
Storage Buffer	Lyophilized from acetonitrile/TFA

GENE INFORMATION

Gene Name	VEGFA vascular endothelial growth factor A [Homo sapiens (human)]
Official Symbol	VEGFA
Synonyms	VEGFA; vascular endothelial growth factor A; vascular endothelial growth factor A; vascular endothelial growth factor A121; vascular endothelial growth factor A165; vascular permeability factor

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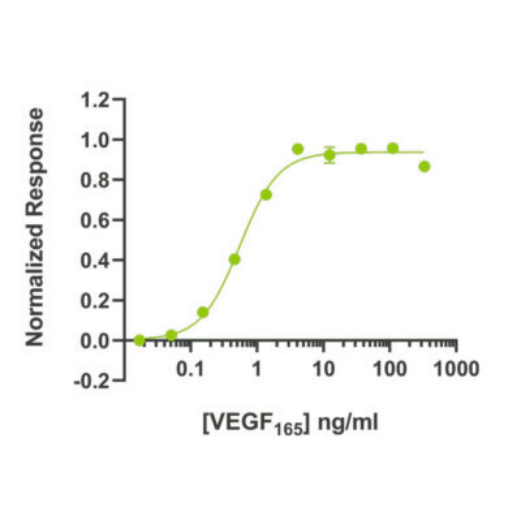
Gene ID	7422
mRNA Refseq	NM_001025366
Protein Refseq	NP_001020537
MIM	192240
UniProt ID	P15692
Bioactivity	 The bioactivity of VEGF165 is measured using a luciferase reporter cell line which stably expresses the KDRreceptor. Cells were incubated with different concentrations of VEGF165 for 6 hours before assaying for luciferase production. EC50=0.55 ng/mL (14.4 pM)

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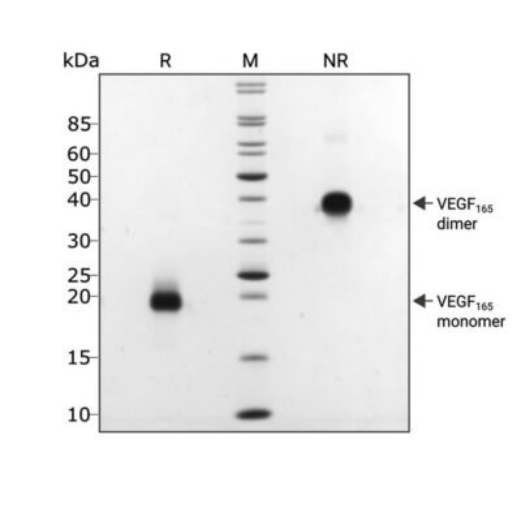
Purity	 Human VEGF165migrates as a dimer at 38 kDa in non-reducingconditions and as a monomer at 19 kDa upon reduction (R). No contaminating bands are visible. Purified recombinant protein was resolved using 15% w/v SDS-PAGE in reducedand non-reducedconditions and stained with Coomassie Brilliant Blue R-250.

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