VEGFA Rat Recombinant Protein

PRODUCT OVERVIEW

Product Name	VEGFA, Recombinant Protein
Full Product Name	Recombinant Rat VEGFA
Product Gene Name	VEGFA recombinant protein
Product Synonym Names	L VEGFA; MVCD1; Vascular permeability factor; VEGF; VEGF A; VEGFA; VPF
Host	E coli
Form/Format	Lyophilized from a 0.2 um filtered solution of 10 mM Hepes, 150 mM NaCl with 5% Trehalose, pH 7.4
Purity/Purification	Greater than 90% as determined by SDS-PAGE.
Preparation and Storage	The lyophilized protein is stable at -20°C for up to 1 year. For extended storage, it is recommended to further dilute in working aliquots after reconstitution. The protein solution is stable at ≤ -20°C for 3 months, or 2-7 days at 2-8°C under sterile conditions.Avoid repeated freeze/thaw cycle
Molecular Weight	21 kDa under reducing conditions
Sequence Positions	27-214
3D Structure	ModBase 3D Structure for P16612
Species	Rat
Tag	N-terminal His
Reconstitution	Centrifuge the vial before opening, reconstitute in sterile distilled water to a concentration of 0.1-1 mg/ml by gently pipetting 2-3 times, don't vortex
Endotoxin	< 1 EU/ug as determined by LAL test.
ISO Certification	Manufactured in an ISO 13485:2003 and EN ISO 13485:2012 Certified Laboratory.
Related Product Information for VEGFA recombinant protein	MBS7616959 is a recombinant protein targeting VEGFA. Also known as Recombinant Rat VEGFA. Host: E coli.
Other Notes	Small volumes of VEGFA recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for VEGFA. It may not necessarily be applicable to this product.

NCBI GI #	160358797
NCBI GeneID	83785
NCBI Accession #	NP_001103804.1
UniProt Primary Accession #	P16612
UniProt Secondary Accession #	Q541S6; Q91ZE1; Q9JKX7; Q9QXG6; Q9QXG7
UniProt Related Accession #	P16612
GenBank Nucleotide #	NM_001110334.2

NCBI Official Full Name	vascular endothelial growth factor A isoform 3
NCBI Official Synonym Full Names	vascular endothelial growth factor A
NCBI Official Symbol	Vegfa
NCBI Official Synonym Symbols	VPF; Vegf; VEGF-A; VEGF164
UniProt Protein Name	Vascular endothelial growth factor A
UniProt Synonym Protein Names	Vascular permeability factor; VPF
UniProt Gene Name	Vegfa
UniProt Synonym Gene Names	Vegf; VEGF-A; VPF
UniProt Entry Name	VEGFA_RAT
NCBI Protein Information	vascular endothelial growth factor A

UniProt Comments for VEGFA	VEGF: Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. Induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis and induces permeabilization of blood vessels. Binds to the FLT1/VEGFR1 and KDR/VEGFR2 receptors, heparan sulfate and heparin. NRP1/Neuropilin-1 binds isoforms VEGF-165 and VEGF-145. Isoform VEGF165B binds to KDR but does not activate downstream signaling pathways, does not activate angiogenesis and inhibits tumor growth. Defects in VEGFA are a cause of susceptibility to microvascular complications of diabetes type 1 (MVCD1). These are pathological conditions that develop in numerous tissues and organs as a consequence of diabetes mellitus. They include diabetic retinopathy, diabetic nephropathy leading to end-stage renal disease, and diabetic neuropathy. Diabetic retinopathy remains the major cause of new-onset blindness among diabetic adults. It is characterized by vascular permeability and increased tissue ischemia and angiogenesis. Belongs to the PDGF/VEGF growth factor family. 13 isoforms of the human protein are produced by alternative promoter. Protein type: Cytokine; Motility/polarity/chemotaxis; Secreted; Secreted, signal peptide Cellular Component: basement membrane; cell surface; cytoplasm; extracellular region; extracellular space; nucleus; secretory granule; vesicle Molecular Function: chemoattractant activity; cytokine activity; extracellular matrix binding; fibronectin binding; growth factor activity; growth factor binding; heparin binding; identical protein binding; platelet-derived growth factor receptor binding; protein heterodimerization activity; protein homodimerization activity; receptor agonist activity; receptor binding; vascular endothelial growth factor receptor 1 binding; vascular endothelial growth factor receptor 2 binding; vascular endothelial growth factor receptor binding Biological Process: activation of CREB transcription factor; activation of protein kinase activity; aging; alveolus development; angiogenesis; artery morphogenesis; basophil chemotaxis; blood vessel development; blood vessel endothelial cell proliferation during sprouting angiogenesis; blood vessel morphogenesis; blood vessel remodeling; branching morphogenesis of a tube; camera-type eye morphogenesis; cardiac muscle fiber development; cell maturation; cell migration; cell migration during sprouting angiogenesis; cell proliferation; endothelial cell migration; epithelial cell differentiation; eye photoreceptor cell development; female pregnancy; growth; heart morphogenesis; homeostasis of number of cells within a tissue; hyaluronan metabolic process; in utero embryonic development; induction of positive chemotaxis; kidney development; lactation; lumen formation; lung development; lymphangiogenesis; macrophage differentiation; mesoderm development; monocyte differentiation; mRNA stabilization; negative regulation of apoptosis; negative regulation of bone resorption; negative regulation of caspase activity; negative regulation of cell-cell adhesion; negative regulation of fat cell differentiation; negative regulation of programmed cell death; negative regulation of transcription from RNA polymerase II promoter; nervous system development; ovarian follicle development; patterning of blood vessels; positive chemotaxis; positive regulation of angiogenesis; positive regulation of axon extension involved in axon guidance; positive regulation of blood vessel endothelial cell migration; positive regulation of cell adhesion; positive regulation of cell migration; positive regulation of cell motility; positive regulation of cell proliferation; positive regulation of endothelial cell proliferation; positive regulation of epithelial cell proliferation; positive regulation of focal adhesion formation; positive regulation of MAP kinase activity; positive regulation of mesenchymal cell proliferation; positive regulation of neuroblast proliferation; positive regulation of osteoblast differentiation; positive regulation of peptidyl-serine phosphorylation; positive regulation of peptidyl-tyrosine phosphorylation; positive regulation of positive chemotaxis; positive regulation of protein amino acid autophosphorylation; positive regulation of protein amino acid phosphorylation; positive regulation of protein complex assembly; positive regulation of receptor internalization; positive regulation of signal transduction; positive regulation of smooth muscle cell proliferation; positive regulation of transcription from RNA polymerase II promoter; positive regulation of tyrosine phosphorylation of Stat3 protein; positive regulation of vascular endothelial growth factor receptor signaling pathway; positive regulation of vascular permeability; post-embryonic camera-type eye development; regulation of cell shape; regulation of cGMP metabolic process; regulation of endothelial cell differentiation; regulation of transcription from RNA polymerase II promoter; response to cold; response to estradiol stimulus; response to folic acid; response to hypoxia; response to progesterone stimulus; response to vitamin A; surfactant homeostasis; T-helper 1 type immune response; vascular endothelial growth factor receptor signaling pathway; vasculature development; wound healing
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