VEGFA Cell Lysate – Tissue Lysate

PRODUCT OVERVIEW

Product Name	VEGFA, Cell Lysate
Full Product Name	Mouse VEGFA Baculovirus-Insect cells Overexpression Lysate
Product Gene Name	VEGFA cell lysate
Product Synonym Names	Mouse VEGFA/VEGF164 Insect Cell Lysate (WB positive control); vascular endothelial growth factor A; Mouse Vegf Overexpression Lysate; Mouse Vpf Overexpression Lysate
Sequence	Met1-Arg19 0
Host	Baculovirus-Insect cells
Form/Format	1x Sample Buffer (1x modified RIPA buffer+1x SDS loading buffer). Modified RIPA Lysis Buffer: 50 mM Tris-HCl pH 7.4, 150 mM NaCl, 1mM EDTA, 1% Triton X-100, 0.1% SDS, 1% Sodium deoxycholate, 1mM PMSF.
Preparation and Storage	Store at 4 degree C for up to twelve months from date of receipt. After re-dissolution, aliquot and store at -80 degree C for up to twelve months. Avoid repeated freeze-thaw cycles. Samples are stable for up to twelve months from date of receipt.
Sequence Positions	164aa
3D Structure	ModBase 3D Structure for Q00731
Species	Mouse
Recommend Usage	1. Centrifuge the tube for a few seconds and ensure the pellet at the bottom of the tube.**2. Re-dissolve the pellet using 200uL pure water and boil for 2-5 min.**
Sequence Construction	A DNA sequence encoding the mouse VEGF164 (isoform VEGF-1) (Q00731-2) (Met 1-Arg 190) was expressed and purified.
Preparation Method	Cell lysate was prepared by homogenization of the over-expressed cells in ice-cold modified RIPA Lysis Buffer with cocktail of protease inhibitors. Cell debris was removed by centrifugation. Protein concentration was determined by Bradford assay (protein assay, Microplate Standard assay). The cell lysate was boiled for 5 min in 1 x SDS loading buffer (50mM Tris-HCl pH 6.8, 12.5% glycerol, 1% sodium dodecylsulfate, 0.01% bromophenol blue) containing 5% b-mercaptoethanol, and lyophilized.
Product Categories/Family for VEGFA cell lysate	Cancer Drug Targets; VEGF Signaling Pathway
Applications Tested/Suitable for VEGFA cell lysate	Western Blot (WB)
Application Notes for VEGFA cell lysate	WB: Use at an assay dependent dilution.
Related Product Information for VEGFA cell lysate	Vascular endothelial growth factor (VEGF), also known as vascular permeability factor (VPF) and VEGF-A, is a potent mediator of both angiogenesis and vasculogenesis in the fetus and adult. It is a member of the platelet-derived growth factor (PDGF)/vascular endothelial growth factor (VEGF) family and often exists as a disulfide-linked homodimer. VEGF-A protein is a glycosylated mitogen that specifically acts on endothelial cells and has various effects, including mediating increased vascular permeability, inducing angiogenesis, vasculogenesis and endothelial cell growth, promoting cell migration, inhibiting apoptosis and tumor growth. VEGF-A protein is also a vasodilator that increases microvascular permeability, thus it was originally referred to as vascular permeability factor. This Mouse VEGFA overexpression lysate was created in Baculovirus-Insect cells and intented for use as a Western blot (WB) positive control. Purification of VEGFA protein from the overexpression lysate was verified.

Product References and Citations for VEGFA cell lysate	Woolard J. et al. (2004) VEGF165b, an inhibitory vascular endothelial growth factor splice variant: mechanism of action, in vivo effect on angiogenesis and endogenous protein expression. Cancer Res. 64(21): 7822-7835. Jia SF, et al. (2008) VEGF165 is necessary to the metastatic potential of Fas(-) osteosarcoma cells but will not rescue the Fas(+) cells. J Exp Ther Oncol. 7(2): 89-97. Cimpean AM, et al. (2008) Vascular endothelial growth factor A (VEGF A) as individual prognostic factor in invasive breast carcinoma. Rom J Morphol Embryol. 49(3): 303-8. Hamdollah Zadeh MA, et al. (2008) VEGF-mediated elevated intracellular calcium and angiogenesis in human microvascular endothelial cells in vitro are inhibited by dominant negative TRPC6. Microcirculation. 15(7): 605-14. Eisenach PA, et al. (2010) MT1-MMP regulates VEGF-A expression through a complex with VEGFR-2 and Src. J Cell Sci. 123(Pt 23):4182-4193. Claesson-Welsh L (2010) Gremlin: vexing VEGF receptor agonist. Blood. 116(18):3386-7.
Other Notes	Small volumes of VEGFA cell lysate 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.
Searchable Terms for VEGFA purchase	MBS8116422 is a cell lysate targeting VEGFA. Also known as Mouse VEGFA Baculovirus-Insect cells Overexpression Lysate. Host: Baculovirus-Insect cells.

ADDITIONAL DETAILS

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

NCBI GI #	160358799
NCBI GeneID	22339
NCBI Accession #	NP_001020421.2
UniProt Primary Accession #	Q00731
UniProt Related Accession #	Q00731
GenBank Nucleotide #	NP_001020421.2
NCBI Official Full Name	vascular endothelial growth factor A isoform 1
NCBI Official Synonym Full Names	vascular endothelial growth factor A
NCBI Official Symbol	Vegfa
NCBI Official Synonym Symbols	Vpf; Vegf
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_MOUSE
NCBI Protein Information	vascular endothelial growth factor A
NCBI Summary for VEGFA	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. Alternatively spliced transcript variants encoding different isoforms have been found for this gene. 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 located within an internal ribosome entry site.[provided by RefSeq, Nov 2015]

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: Motility/polarity/chemotaxis; Cytokine; Secreted; Secreted, signal peptide Cellular Component: extracellular space; cell surface; membrane; cytoplasm; plasma membrane; extracellular region; basement membrane; secretory granule Molecular Function: heparin binding; identical protein binding; protein homodimerization activity; growth factor activity; extracellular matrix binding; cytokine activity; platelet-derived growth factor receptor binding; vascular endothelial growth factor receptor 1 binding; vascular endothelial growth factor receptor binding; receptor agonist activity; protein binding; vascular endothelial growth factor receptor 2 binding; protein heterodimerization activity; fibronectin binding; receptor binding; chemoattractant activity Biological Process: heart morphogenesis; positive regulation of cell adhesion; macrophage differentiation; positive regulation of positive chemotaxis; multicellular organismal development; cell maturation; positive regulation of receptor internalization; basophil chemotaxis; regulation of cell shape; positive regulation of MAP kinase activity; positive chemotaxis; positive regulation of mesenchymal cell proliferation; mesoderm development; negative regulation of neuron apoptosis; kidney development; positive regulation of neuroblast proliferation; nervous system development; T-helper 1 type immune response; positive regulation of signal transduction; monocyte differentiation; mRNA stabilization; positive regulation of blood vessel endothelial cell migration; activation of CREB transcription factor; positive regulation of protein amino acid autophosphorylation; positive regulation of vascular permeability; regulation of endothelial cell differentiation; patterning of blood vessels; regulation of transcription from RNA polymerase II promoter; eye photoreceptor cell development; positive regulation of angiogenesis; positive regulation of peptidyl-tyrosine phosphorylation; camera-type eye morphogenesis; branching morphogenesis of a tube; cell migration during sprouting angiogenesis; cardiac muscle fiber development; positive regulation of cell division; positive regulation of axon extension involved in axon guidance; activation of protein kinase activity; blood vessel morphogenesis; endothelial cell migration; neuron development; positive regulation of transcription from RNA polymerase II promoter; positive regulation of endothelial cell proliferation; regulation of cGMP metabolic process; surfactant homeostasis; alveolus development; positive regulation of epithelial cell proliferation; negative regulation of apoptosis; lactation; post-embryonic camera-type eye development; positive regulation of smooth muscle cell proliferation; negative regulation of caspase activity; negative regulation of transcription from RNA polymerase II promoter; positive regulation of vascular endothelial growth factor receptor signaling pathway; induction of positive chemotaxis; positive regulation of focal adhesion formation; epithelial cell differentiation; ovarian follicle development; vasculature development; lymphangiogenesis; positive regulation of cell proliferation; negative regulation of programmed cell death; angiogenesis; cell differentiation; negative regulation of bone resorption; blood vessel development; cell migration; in utero embryonic development; lumen formation; positive regulation of cell motility; positive regulation of peptidyl-serine phosphorylation; positive regulation of protein kinase B signaling cascade; cell proliferation; positive regulation of protein complex assembly; response to hypoxia; artery morphogenesis; blood vessel remodeling; negative regulation of cell-cell adhesion; positive regulation of protein amino acid phosphorylation; sprouting angiogenesis; vascular endothelial growth factor receptor signaling pathway; lung development; growth; positive regulation of cell migration
Research Articles on VEGFA	**1.** CaD reduced VEGF signaling in mice diabetic kidneys and ameliorated diabetic nephropathy and neuropathy, suggesting CaD as a VEGF inhibitor without the negative effects of complete VEGF blockade and therefore could be useful as a strategy in treating diabetic nephropathy.
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