

Active Recombinant rat VEGF 164

Cat. No. Vegfa-27R **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant rat VEGF 164, expressed in a mouse myeloma cell line, NSO. A DNA sequence encoding rat VEGF164 (Conn, G. et al., 1990, Proc. Natl. Acad. Sci. USA 87:2628 - 2632) was expressed in a mouse myeloma cell line, NSO.
Species	Rat
Source	Mammalian Cells
Description	Vascular endothelial growth factor (VEGF), also known as vascular permeability factor (VPF) or vasculotropin, is a homodimeric 34 - 42 kDa, heparin-binding glycoprotein with potent angiogenic, mitogenic and vascular permeability-enhancing activities specific for endothelial cells. The amino acid sequence of VEGF exhibits primary structural, as well as limited amino acid sequence, homology with that of the A and B chains of PDGF. All eight cysteine residues involved in intra- and inter-chain disulfide bonds are conserved among these growth factors. A cDNA encoding a protein having a 53% amino acid sequence homology in the PDGF-like region of VEGF has been isolated from a human placental cDNA library. This protein, named placenta growth factor (PlGF), is now recognized to be a member of the VEGF family of growth factors. Based on its homology with VEGF, PlGF was also proposed to be an angiogenic factor. Two receptor tyrosine kinases have been described as putative VEGF receptors. Flt-1 (fms-like tyrosine kinase), and KDR (kinase-insert-domain-containing receptor) proteins have been shown to bind VEGF with high affinity.
Form	Lyophilized from a 0.2 um filtered solution in 35% acetonitrile plus 0.1% TFA.

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Bio-activity	Measured by its ability to stimulate 3H-thymidine incorporation in HUVE cells. The ED50 for this effect is typically 3 - 10 ng/mL.
Molecular Mass	The recombinant disulfide-linked homodimeric rat VEGF is glycosylated. Dimeric and monomeric rrVEGF164 migrate as 50 kDa and 25 kDa proteins in SDS-PAGE, respectively.
Endotoxin	< 0.1 ng per 1 of the cytokine as determined by the lal
Purity	>95%, as determined by SDS-PAGE and visualized by silver stain.
Usage	FOR RESEARCH USE ONLY
Quality Control Test	Lyophilized samples are stable for up to six months at -20 centigrade to -70 centigrade. Upon reconstitution, this cytokine, in the presence of a carrier protein, can be stored under sterile conditions at 2 - 8 centigrade for one month or at -20 centigrade to -70 centigrade in a manual defrost freezer for three months without detectable loss of activity.
Reconstitution	It is recommended that sterile PBS be added to the vial to prepare a working st centigradek solution of no less than 100 ug/mL. The carrier-free protein should be used immediately upon reconstitution to avoid losses in activity due to non-specific binding to the inside surface of the vial. For long term storage as a dilute solution, a carrier protein (e.g. 0.1% HSA or BSA) should be added to the vial.
Warning	Avoid repeated freeze-thaw cycles.

GENE INFORMATION

Gene Name	Vegfa vascular endothelial growth factor A [Rattus norvegicus]
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Official Symbol	Vegfa
Synonyms	VEGFA; vascular endothelial growth factor A; VPF; VEGF-A; vascular permeability factor; Vegf; VEGF164;
Gene ID	83785
mRNA Refseq	NM_001110333
Protein Refseq	NP_001103803
Chromosome Location	9q12
Pathway	Bladder cancer, organism-specific biosystem; Bladder cancer, conserved biosystem; Endochondral Ossification, organism-specific biosystem; Focal adhesion, organism-specific biosystem; Focal adhesion, conserved biosystem; Hemostasis, organism-specific biosystem; Hypertrophy Model, organism-specific biosystem;
Function	cell surface binding; cell surface binding; chemoattractant activity; chemoattractant activity; cytokine activity; cytokine activity; fibronectin binding; fibronectin binding; growth factor activity; growth factor activity; heparin binding; heparin binding; platelet-derived growth factor receptor binding; platelet-derived growth factor receptor binding; protein heterodimerization activity; protein heterodimerization activity; protein homodimerization activity; receptor agonist activity; vascular endothelial growth factor receptor 1 binding; vascular endothelial growth factor receptor 1 binding; vascular endothelial growth factor receptor 2 binding; vascular endothelial growth factor receptor 2 binding; vascular endothelial growth factor receptor 2 binding; vascular endothelial growth factor receptor binding; vascular endothelial growth factor receptor binding;

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