

Product Information

VEGF RECEPTOR-3 (FLT-4)/FC CHIMERA **Mouse, Recombinant** **Expressed in insect Sf21 cells**

Product Number **V6633**

Product Description

Mouse Vascular Endothelial Growth Factor Receptor 3 (VEGF R3, Flt-4)/Fc Chimera is produced from a DNA sequence encoding the signal peptide from human CD33 joined with amino acid residues 25 to 770 of the extracellular domain of mouse VEGF R3 (Flt-4).¹ This receptor is fused to the 6X histidine tagged Fc portion of human IgG1 by a polypeptide linker. Recombinant mature mouse is a disulfide-linked homodimeric protein. Based on N-terminal sequencing, the mature protein has Met 17 at the amino-terminus. The reduced monomer has a calculated molecular mass of approximately 84.5 kDa. As a result of glycosylation, the protein migrates to approximately 110 to 120 kDa in SDS-PAGE under reducing conditions.

Mature native mouse VEGF R3 is composed of a 751 amino acid residue extracellular domain, a 22 amino acid residue transmembrane domain, and a 565 amino acid residue cytoplasmic domain. The amino acid sequence of mouse VEGF R3 is 88 % identical to human VEGF R3.

Vascular endothelial growth factors (VEGFs) are a family of closely related growth factors having a conserved pattern of eight cysteine residues and sharing common VEGF receptors. VEGFs stimulate the proliferation of endothelial cells, induce angiogenesis, and increase vascular permeability in both large and small vessels.² The mitogenic activity of VEGFs appears to be mediated by specific VEGF receptors.

VEGF Receptor-3 (VEGF R3) is one of the five receptor tyrosine kinases (RTKs) (VEGF R1/Flt1, VEGF R2/KDR/Flk-1, VEGF R3/Flt-4, tie-1, and tek/tie-2) whose expression is almost exclusively restricted to endothelial cells. Tie-1 and tek/tie-2 are a class of RTKs containing two immunoglobulin-like domains, three EGF homology domains and three fibronectin type III

domains in their extracellular regions. VEGF R1/Flt-1, VEGF R2/KDR/Flk-1, and VEGF R3/Flt-4 are members of the class III subfamily of RTKs containing seven immunoglobulin-like repeats in their extracellular domains. All five of the receptor tyrosine kinases (RTKs) play central roles in vasculogenesis and angiogenesis.

VEGF R3 is a specific marker for lymphatic vessels. In adults, VEGF R3 expression is restricted to the endothelial cells of the lymphatic vessels. It has also been detected on some high endothelial venules, in embryonic pre-lymphatic blood vessels, in some tumor blood vessels, and in certain hematopoietic and leukemia cells.³ The predominant role of VEGF-R3 is its involvement in the development of the lymphatic vessel system. Both VEGF-C and VEGF-D bind and activate the receptors, VEGF R3 and VEGF R2.^{4, 5}

Reagent

Recombinant Mouse VEGF Receptor-3 (Flt-4)/Fc Chimera is supplied as approximately 100 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline (PBS).

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 100 µg/ml.

Storage/Stability

Store at -20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

The biological activity of recombinant mouse VEGF R3/Fc Chimera is measured by its ability to bind human VEGF-D. Immobilized recombinant mouse VEGF R3/Fc at 5 µg/ml (100 µl/well) can bind recombinant VEGF-D (4 to 500 ng/ml) in an ELISA assay.

Purity: > 95 % as determined by SDS-Page, visualized by silver stain.

Endotoxin level is < 0.1 ng/µg protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Finnerty, H., et al., Molecular cloning of murine FLT and FLT4. *Oncogene*, **8**, 2293-2298 (1993).
2. Ferrara, N., and Davis-Smyth, T., The biology of vascular endothelial growth factor. *Endocr. Rev.*, **18**, 4-25 (1997).
3. Taipale, J., et al., Vascular endothelial growth factor receptor-3. *Curr. Top. Microbiol. Immunol.*, **237**, 85-96 (1999).
4. Joukov, V., et al., A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases. *EMBO J.*, **15**, 290-298 (1996).
5. Achen, M.G., et al., Vascular endothelial growth factor D (VEGF-D) is a ligand for the tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4). *Proc. Natl. Acad. Sci. USA*, **95**, 548-553 (1998).

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