

## Product Information

### VEGF RECEPTOR-1 (FLT-1) FC CHIMERA

Mouse, Recombinant

Expressed in mouse NSO cells

Product Number **V6137**

#### Product Description

VEGF R1 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 define 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. Mature VEGF R1 is composed of a 737 amino acid residue extracellular domain, a 22 amino acid residue transmembrane domain and a 552 amino acid residue cytoplasmic domain.

VEGF R1 and VEGF R2 are both expressed in an endothelial cell-specific manner. They are detectable in virtually all tissues in adults and embryos. VEGF R1 is responsible for guiding endothelial cells into the proper spatial organization of lumen-containing vessels. Alternative splicing of VEGF R1 pre-mRNA is important in the regulation of VEGF activity in angiogenesis.<sup>1</sup> Vascular endothelial growth factor B (VEGF-B) binds to VEGF R1 and regulates plasminogen activator activity in endothelial cells.<sup>2</sup>

#### Reagents

A mouse recombinant form of VEGF R1<sup>3</sup> is expressed in a mouse myeloma cell line, NSO. The cDNA sequence encodes the extracellular domain of mouse VEGF R1 and is fused to the carboxy-terminal 6X histidine-tagged region of human IgG, via a peptide linker.

Molecular Mass: The recombinant mature mouse VEGF R1 (Flt-1) is a disulfide-linked homodimer. Based on N-terminal sequencing, the recombinant mouse VEGF R1/Fc protein has Ser 27 at the amino-terminus. Each mouse VEGF R1/Fc monomer has a calculated molecular mass of 110 kDa. As a result of glycosylation, the monomer migrates as an approximately 200 kDa protein in SDS-PAGE.

Purity: >90% as determined by SDS-PAGE, visualized by silver stain  
Package size: 100 µg  
Formulation: Lyophilized from a 0.2 µm filtered solution in phosphate-buffered saline (PBS)  
Endotoxin: < 0.1 ng/µg of VEGF receptor-1, determined by the LAL method

#### 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 10 µg/ml.

#### Storage/Stability

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

#### Product Profile

VEGF receptor-1 (Flt-1) is measured by its ability to inhibit the VEGF-dependant proliferation of human umbilical vein endothelial cells.<sup>4</sup> The ED<sub>50</sub> for this effect is typically 10 - 30 ng/ml. The ED<sub>50</sub> is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

#### References

1. He, Y., et al., Alternative splicing of vascular endothelial growth factor (VEGF)-R1 (FLT-1) pre-mRNA is important for the regulation of VEGF activity, *Mol. Endocrinol.*, **13**, 537-545 (1999).
2. Olofsson, B., et al., Vascular endothelial growth factor B (VEGF-B) binds to VEGF receptor-1 and regulates plasminogen activator activity in endothelial cells, *Proc. Natl. Acad. Sci. USA*, **95**, 11709-11714 (1998).
3. Finnerty, H. et al., Molecular cloning of murine FLT and FLT4, *Oncogene*, **8**, 2293-2298 (1993).
4. Conn, G., et al., Purification of a glycoprotein vascular endothelial cell mitogen from a rat glioma-derived cell line, *Proc. Natl. Acad. Sci. USA*, **87**, 1323-1327 (1990).

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