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ProductInformation

Vascular Endothelial Growth Factor D
Human, Recombinant
Expressed in *Sf* 21 cells

Product Number **V 6012**

Product Description

Recombinant Human Vascular Endothelial Growth Factor D (VEGF-D) is produced from the DNA sequence encoding the VEGF domain of human VEGF-D[1] and fused to the signal peptide of CD33 at the N-terminus and to a 6X histidine tag at the C-terminus. The chimeric protein is expressed in *Sf* 21 cells using a baculovirus expression system. Based on N-terminal sequencing, Met 17 from the CD33 signal peptide is retained in the recombinant protein. This methionyl form contains 115 amino acid residues with a calculated molecular mass of approximately 13 kDa. As a result of glycosylation, the recombinant protein migrates as a 20 and 22 kDa protein in SDS-PAGE under reducing and non-reducing conditions. This recombinant VEGF-D also contains a small amount of disulfide-linked homodimeric VEGF-D.

Vascular Endothelial Growth Factor D (VEGF-D), also known as *c-fos*-induced growth factor (FIGF), is a member of the VEGF family of growth factors. Vascular endothelial growth factor (VEGF) family consists of closely related growth factors having a conserved pattern of eight cysteine residues and sharing common VEGF receptors. VEGF is a dimeric glycoprotein that stimulates endothelial cells, induces angiogenesis, promotes cell migration, increases vascular permeability and inhibits apoptosis. VEGF-D is most closely related to VEGF-C (23.3% amino acid sequence identity) and has similar VEGF homology domain that spans the middle third of the precursor protein, and long N- and C-terminal extensions.[2]

In adults, VEGF-D is highly expressed in lung, heart, muscle and small intestine. VEGF-D has special relevance in the vascularization of lung tissue during the last trimester of fetal development.[1] Recombinant human VEGF-D is a ligand for the tyrosine kinases, VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4). VEGF R3 is strongly expressed in lymphatic endothelial cells and it is postulated that VEGF-D is involved in the regulation of the growth and/or differentiation of lymphatic endothelium and thus, a mitogen for endothelial cells.[3]

Reagent

Recombinant Human Vascular Endothelial Growth Factor D is lyophilized from a 0.2 μm filtered solution in phosphate-buffered saline containing 0.25 mg bovine serum albumin

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate buffered saline containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 20 μg/ml.

Storage/Stability

Store at –20 °C. Upon reconstitution, this cytokine may be stored at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

VEGF-D is measured by its ability to bind to recombinant human Flt-4/Fc. Immobilized recombinant human Flt-4/Fc at 4 µg/ml (100 µl/well) binds recombinant human VEGF-D with a linear range at 8 ng/ml - 500 ng/ml in a functional ELISA assay.

Endotoxin: < 1.0 EU (endotoxin units)/µg of cytokine as determined by the LAL method

References

1. Yamada, Y., et al., Molecular cloning of a novel vascular endothelial growth factor, VEGF-D, Genomics, **42**, 482-488 (1997).
2. Farnebo, F., et. al., Restricted expression pattern of vegf-d in the adult and fetal mouse: high expression in the embryonic lung, Biochem. Biophys. Res. Commun., **257,** 891-894 (1999).
3. 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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