

## VEGF-D Human HEK293 cells

### Product Data Sheet

<b>Type:</b> Recombinant	<b>Cat. No.:</b>	
<b>Source:</b> HEK293 cells	RBG10345002	(2 µg)
<b>Species:</b> Human	RBG10345010	(10 µg)
<b>Other names:</b> Vascular Endothelial Growth Factor-D, FIGF	RBG10345100	(100 µg)

### Description

VEGF-D, a member of the VEGF/PDGF family of structurally related proteins, is a potent angiogenic cytokine. It promotes endothelial cell growth, promotes lymphangiogenesis, and can also affect vascular permeability. VEGF-D is highly expressed in the lung, heart, small intestine and fetal lung, and at lower levels in the skeletal muscle, colon, and pancreas. It forms cell surface-associated, non-covalent, disulfide-linked homodimers, and can bind and activate both VEGFR-2 (flk1) and VEGFR-3 (flt4) receptors. During embryogenesis, VEGF-D may play a role in the formation of the venous and lymphatic vascular systems. It also participates in the growth and maintenance of differentiated lymphatic endothelium in adults. Both VEGF-C and VEGF-D are over-expressed in certain cancers, and the resulting elevated levels of VEGF-C or VEGF-D tend to correlate with increased lymphatic metastasis. Recombinant Human VEGF-D is a 26.2 kDa, non-disulfide linked, homodimeric protein consisting of two 117 amino acid polypeptide chains. Due to glycosylation, the protein migrates as a 20.0-22.0 kDa band by SDS-PAGE analysis under non-reducing conditions.

### Introduction to the Molecule

VEGF-D (vascular endothelial growth factor D) is synthesized as a full-length protein with a molecular weight of ~53 kDa. It contains a central VEGF homology domain (VHD) flanked by N- and C-terminal propeptides. Fulllength VEGF-D is secreted and is immediately proteolytically processed outside the cell by plasmin and proprotein convertases, thereby generating a mature form (molecular weight ~21 kDa) with a much higher affinity for VEGFR-2 and -3 compared with the unprocessed form. VEGF-D, also known as c-fos-induced growth factor, is a secreted growth factor consisting of VEGF-homology domain, receptor binding domains, and propeptides in both termini. After secretion into the extracellular space, the C- and N-terminal propeptides are cleaved from full length VEGF-D to form mature VEGF-D. This proteolytic processing increases the affinity of VEGF-D for VEGFR-3, a tyrosine kinase receptor that is mainly located on adult lymphatic endothelium and is implicated in lymphangiogenesis. VEGF-D also interacts with a non-tyrosine kinase receptor Nrp-2, another lymphangiogenesis-associated factor. VEGF-D is expressed in a range of human tumors, and can correlate with lymph node metastasis and poor patient outcome. Clinicopathological as well as experimental data indicate that the VEGF-D signaling pathway may be a therapeutic target for restricting the spread of cancer. Further, it has been proposed that VEGF-D is an alternative mediator of tumor angiogenesis to VEGF-A, that might contribute to mechanisms of resistance to bevacizumab, a widely used anti-cancer drug targeting VEGF-A.

### Research topic

Cardiovascular disease, Coronary artery disease, Oncology, Pulmonary diseases

### Amino Acid Sequence

FAATFYDIET LKVIDEEWQR TQCSPRETCV EVASELGKST NTFKPPCVN VFRCGGCCNE ESLICMNTST SYISKQLFEI  
SVPLTSVPEL VPKVANHTG CKCLPTAPRH PYSIIRR

### Source

HEK293 cells

### Purity

95%

### Biological Activity

Measured by its ability to bind immobilized recombinant human Neuropilin-1 in an ELISA.

### Endotoxin

Endotoxin level is <0.1 ng/µg of protein (<1EU/µg).

## Reconstitution

Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.

## Storage, Stability/Shelf Life

-20°C

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