

Recombinant Human VEGF-D (carrier-free)

Catalog# / Size	760501 / 2 µg 760502 / 10 µg
Regulatory Status	RUO
Other Names	Vascular endothelial growth factor D, c-Fos-induced growth factor, FIGF
Description	Vascular endothelial growth factor D (VEGF-D), also known as c-fos-induced growth factor (FIGF), is a member of the VEGF family. VEGF-D is structurally similar to VEGF-C and both are specific ligands for the tyrosine kinase receptor VEGFR-3 (flt-4). They are both secreted as non-covalent homodimers. The secreted VEGF-D undergoes a complex proteolytic process enabling it to also act as a ligand for VEGFR-2 (KDR/flk-1). VEGF-D is expressed in adult lungs, heart, muscles, and small intestines. It is most abundantly expressed in the fetal lungs and skin. VEGF-D exhibits mitogenic effects on vascular and lymphatic endothelial cells. VEGF-D functions in the formation of the venous and lymphatic vascular systems during embryogenesis and in the maintenance of differentiated lymphatic endothelium in adults. Both VEGF-C and VEGF-D are over-expressed in certain cancers and promote tumor lymphangiogenesis. TGF-β1 has been shown to downregulate VEGF-D expression in human lung fibroblasts.

Product Details

Source	Human VEGF-D, amino acids (Phe89-Arg205) (Accession# O43915), was expressed in HEK293.
Molecular Mass	The 117 amino acid recombinant protein has a predicted molecular mass of approximately 13.1 kD. The protein migrates at approximately 20-22 kD under non-reducing conditions by SDS-PAGE. The predicted N-terminal amino acid is Phe.
Purity	>95%, as determined by SDS-PAGE gel and HPLC analysis.
Formulation	Lyophilized from 0.2 µm filtered protein solution in 10 mM Sodium Citrate, pH 4.0.
Endotoxin Level	Less than 1.0 EU per µg protein as determined by the LAL method.
Storage & Handling	Unopened vial can be stored at -20°C or -70°C. For maximum results, quick spin vial prior to opening. Reconstitute in water to a concentration of 0.1-0.5 mg/ml. Do not vortex. It is recommended to further dilute in a buffer containing a carrier protein such as 0.1% BSA and store working aliquots at -20°C to -80°C. Avoid repeated freeze/thaw cycles.
Activity	ED ₅₀ = 0.15 — 0.6 µg/mL as measured by the ability of the protein to induce proliferation of HMVEC.
Application	Bioassay

Antigen Details

Structure	Non-covalent homodimer.
Distribution	VEGF-D is expressed in the adult lungs, heart, muscles, and small intestines; it is most abundantly expressed in the fetal heart and lungs and skin.
Function	VEGF-D plays a key role in lymphangiogenesis, stimulates the migration, proliferation, and the survival of human endothelial cells.
Interaction	Lymphatic endothelial cells and vascular endothelial cells.
Ligand/Receptor	VEGF-R3, VEGF-R2, and Neuropilin-1.
Bioactivity	Measured by the ability of human VEGF-D to induce the proliferation of HMVEC human microvascular endothelial cells.
Cell Type	Neural Stem Cells, Mesenchymal Stem Cells, Hematopoietic stem and progenitors

Biology Area Cell Biology, Neuroscience, Stem Cells, Synaptic Biology, Angiogenesis, Stem Cells

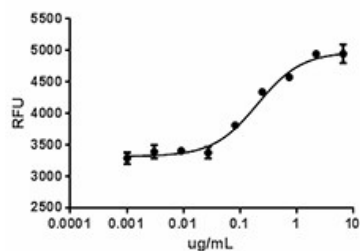
Molecular Family Growth Factors, Cytokines/Chemokines

Antigen References

1. Yamada Y, *et al.* 1997. *Genomics* 42:483-488.
2. Achen MG, *et al.* 1998. *Proc. Natl. Acad. Sci. USA* 2:548-553.
3. Stacker SA, *et al.* 2001. *Nat. Med.* 2:186-91.
4. Duff SE, *et al.* 2003. *Br. J. Cancer* 89:426-430.
5. Tammela T, *et al.* 2005. *Cardiovasc. Res.* 65:550-563.
6. Roy H, *et al.* 2006. *FEBS Letters* 580:2879-87.
7. Cui Y, *et al.* 2014. *Mol. Med.* 20:120-134.

Gene ID [2277](#)

Product Data



Human VEGF-D induces the proliferation of HMVEC human microvascular endothelial cells in a dose dependent manner.

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