

Recombinant Human VEGF-C (carrier-free)

Catalog# / Size	589702 / 10 µg 589704 / 25 µg 589706 / 100 µg
Regulatory Status	RUO
Other Names	Vascular endothelial growth factor related protein (VRP), Flt4 ligand, Flt4-L
Description	VEGF-C was initially cloned from human prostatic adenocarcinoma cell line PC-3 and human glioma G61 cell cDNA libraries. VEGF-C belongs to the VEGF family that includes the following members, VEGF-A, VEGF-B, VEGF-C, VEGF-D, and PlGF (placental growth factor). In addition, viral VEGF homologs (collectively called VEGF-E) and snake venom VEGFs such as T.f. (Trimeresurus flavoviridis) and svVEGF (called VEGF-F) have been described. The homologous portions of VEGF-C are ~30% identical to VEGF165, ~27% to VEGF-B167, ~25% to PlGF- 1, and ~22-24% to PDGF-A and PDGF-B. VEGF-C possesses a C-terminal silk-protein-like structural motif (pattern of spacing cysteine residues) not present in other member of the VEGF family. VEGF-C binds to VEGFR3 that is almost exclusively expressed in lymphatic endothelium in adults, whereas in embryos (mid-gestation) it is expressed on blood vessels and is required for blood vascular remodeling. VEGFR3 is shared by VEGF-C and VEGF-D. VEGF-C is required for sprouting of the first lymphatic vessels from embryonic veins. Also, VEGF-C promotes survival of retinal vascular endothelial cells via VEGFR2. High levels of VEGF-C (in serum) have been associated to dyslipidemia and atherosclerosis. In addition, elevated levels of VEGF-C are increased in the serum of patients with some cancers (primary nonsmall cell lung carcinoma, cervical carcinoma, and gastric cancer among others) and it has been suggested that it is correlated with lymph node metastases and poor prognosis.

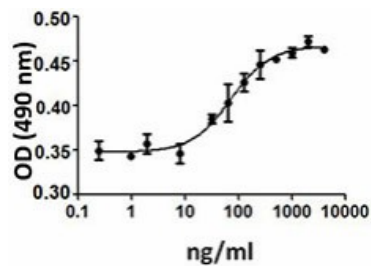
Product Details

Source	Human VEGF-C, amino acids (Thr103-Arg227) (Accession# NM_005429.2) was expressed in CHO cells. The recombinant has a C-terminal 10His tag.
Molecular Mass	The 135 amino acid recombinant protein has a predicted molecular mass of approximately 15.4 kD. The DTT-reduced and non-reduced protein migrate at approximately 23-28 and 20-25 kD by SDS-PAGE respectively. The N-terminal amino acid is Thr.
Purity	>98%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in PBS.
Endotoxin Level	Less than 0.01 ng per µg cytokine as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. Avoid repeated freeze/thaw cycles.
Activity	ED50 = 100 - 500 ng/ml, corresponding to a specific activity of 0.2 - 1.0 x 10 ⁴ units/mg, as determined by the dose dependent stimulation of HUVEC cell proliferation.
Application	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee . If you have any concerns, contact us at tech@biolegend.com .

Antigen Details

Distribution	VEGF-C messenger RNA is expressed in multiple tissues such as heart, placenta, muscle, ovary, and small intestine. VEGF-C is expressed by endothelial cells.
Function	VEGF-C plays a key role in lymphangiogenesis, stimulates the migration, proliferation, and survival of human endothelial cells. Survivin regulates expression of VEGF-C in breast cancer cells. VEGF-C is induced by IL-1 and TNF in endothelial cells.
Interaction	Lymphatic endothelial cells, endothelial cells, and subsets of leukemic cells.
Ligand/Receptor	VEGFR3 (Flt4), VEGFR2 (KDR/FLK1), VEGFR2/VEGFR3 heterodimer.
Cell Type	Neural Stem Cells, Mesenchymal Stem Cells, Hematopoietic stem and progenitors
Biology Area	Cell Biology, Neuroscience, Stem Cells, Synaptic Biology, Angiogenesis
Molecular Family	Growth Factors, Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Joukov V, <i>et al.</i> 1996. <i>J. EMBO.</i> 15:290.2. Dias S, <i>et al.</i> 2002. <i>Blood</i> 99:2179.3. Karkkainen MJ, <i>et al.</i> 2004. <i>Nat. Immunol.</i> 5:74.4. Nilsson I, <i>et al.</i> 2010. <i>J. EMBO.</i> 20:1377.5. Tanaka T, <i>et al.</i> 2010. <i>J. Exp. Clin. Can. Res.</i> 29:83.6. Wada H, <i>et al.</i> 2011. <i>PlosOne</i> 6:e293517. Cai X, <i>et al.</i> 2012. <i>Diagn. Pathol.</i> 7:52.
Gene ID	7424

Product Data



HUVEC cell proliferation induced by human VEGF-C.

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