

Recombinant Human VEGF (ELISA Std.)

Catalog# / Size	560309 / 4 pack
Regulatory Status	RUO
Other Names	VEGFA, VEGF-A, VPF, MVCD1, vascular endothelial growth factor

Description VEGF (also known as VEGF-A) is a signaling protein with strong vascular permeability activity that stimulates the formation of new blood vessels during the processes of vasculogenesis and angiogenesis. It is a member of the vascular endothelial growth factor family, which in mammals is comprised of VEGF-A, VEGF-B, VEGF-C, VEGF-D, and PlGF (placental growth factor). There are multiple isoforms of VEGF that result from alternative splicing of mRNA. VEGF binds and activates two tyrosine kinase receptors, VEGFR1 (Flt-1) and VEGFR2 (KDR/Flk-1), through which VEGF exerts its mitogenic effects. VEGF is highly expressed in solid tumors of breast, lung, renal, colorectal, and hepatic origin. Additionally, it significantly contributes to ascites tumor formation. Beyond cancer, VEGF has also been associated with multiple pathogenic conditions including rheumatoid arthritis, age-related macular degeneration, Crow-Fukase syndrome, sclerosis and Alzheimer's disease.

Product Details

Source	Human VEGF-165, amino acids Ala27-Arg191 (Accession# AAM03108) was expressed in 293E cells.
Molecular Mass	The 165 amino acid recombinant protein has a predicted molecular mass of approximately 19 kD. The DTT-reduced protein migrates at approximately 20-28 kD and non-reduced protein migrates at 50 kD by SDS-PAGE. The N-terminal amino acid is Alanine.
Purity	>95%, as determined by Coomassie stained SDS-PAGE.
Formulation	Lyophilized in sterile-filtered PBS, pH 7.2, containing 1% BSA, 0.09% sodium azide, and protease inhibitors.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
Storage & Handling	Immediately upon receipt, store unopened vials between 2°C and 8°C and use within 12 months from date of receipt. Prior to use, reconstitute the lyophilized powder with 0.2 ml of PBS containing a carrier protein (e.g., 1% BSA, protease free), pH 7.4. Re-cap vial, vortex. Allow the reconstituted standard to sit at room temperature for 15 minutes, vortex again to mix completely. The reconstituted standard stock solution can be aliquoted into polypropylene vials and stored at -70°C for up to one month. Do not re-use diluted standards. Use a manual defrost freezer and avoid repeated freeze thaw cycles.
Application	ELISA - Quality tested
Recommended Usage	Each lot of this protein is quality control tested by ELISA assay . For use as an ELISA standard, a standard curve comprised of doubling dilutions from 23.4 to 1,500 pg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	This human VEGF protein is useful as a standard for a human VEGF sandwich ELISA, using unlabeled A15136H antibody (catalog #537002) as capture and biotinylated Poly5225 antibody (catalog #522503) as detection.

Antigen Details

Structure	Homodimer
Distribution	Widely expressed
Function	VEGFA is a key player in vasculogenesis, the formation of blood vessels from progenitor cells, as well as angiogenesis. The expression of the VEGFA gene is upregulated via hypoxia, estrogen, and NF-κB pathways. In addition, VEGFA is upregulated by PDGF-BB, P1GF, TGFβ1, IGF1,

FGFs, HGF, TNF α , and IL-1. VEGFA induces proliferation and cell migration in endothelial cells, and plays important roles during wound healing. Also, VEGFA regulates haematopoietic stem cell survival.

Interaction

VEGFA interacts with vascular endothelial cells and monocytes/macrophages, which express VEGFR1. This interaction induces proliferation of endothelial cells and stimulates migration of monocytes/macrophages.

Ligand/Receptor

VEGFA binds and activates two tyrosine kinase receptors, VEGFR1 (Flt-1), VEGFR2 (KDR/Flk-1)

Biology Area

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

Molecular Family

Cytokines/Chemokines, Growth Factors

Antigen References

1. Conn G, *et al.* 1990 *Proc. Natl. Acad. Sci. USA* 87:1323.
2. Gerber H, *et al.* 2002. *Nature* 417:954.
3. Shibuya M. 2006. *J. Biochem. Mol. Biol.* 39:469.
4. Shibuya M. 2008. *BMB Rep.* 41:278.
5. Monaghan-Benson E, *et al.* 2010. *The American Journal of Pathology* 177:2091.
6. Koch S and Claesson-Welsh L. 2012. *Cold Spring Harb Perspect Med.* 2:a006502.

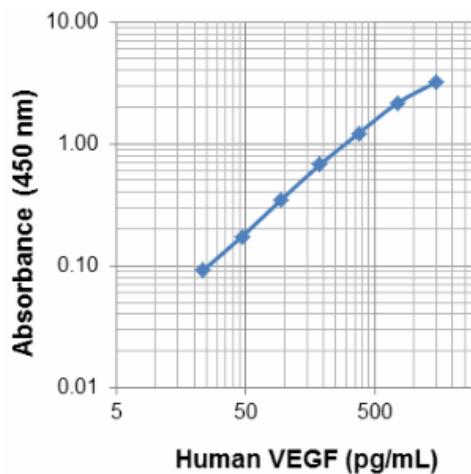
Gene ID

[7422](#)

Related Protocols

[Sandwich ELISA Protocol](#)

Product Data



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BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587