Synonym

RP1-261G23.1,MGC70609,MVCD1,VEGFA,VPF

Source

Human VEGF165, His Tag(VE5-H5248) is expressed from human 293 cells (HEK293). It contains AA Ala 27 - Arg 191 (Accession # P15692-4).
Predicted N-terminus: His

Molecular Characterization

Poly-his	VEGF165(Ala 27 - Arg 191) P15692-4

This protein carries a polyhistidine tag at the N-terminus.

The protein has a calculated MW of 21.1 kDa. The protein migrates as 27-28 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>90% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

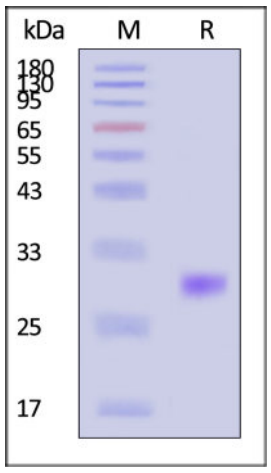
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

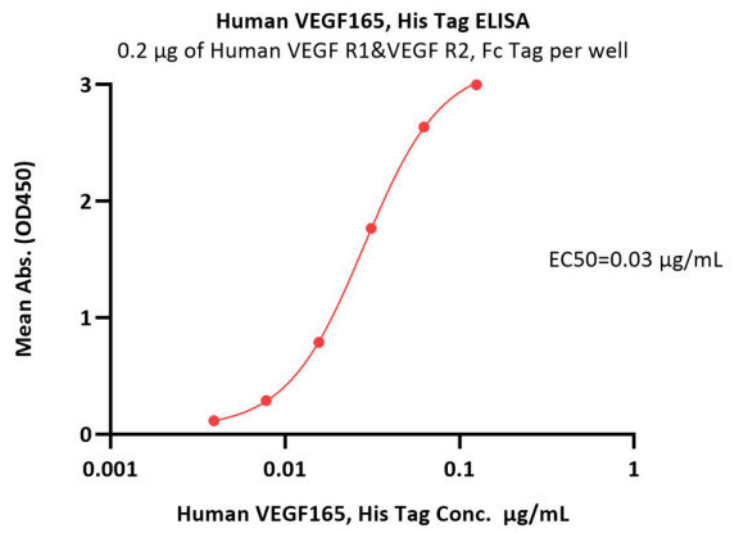
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



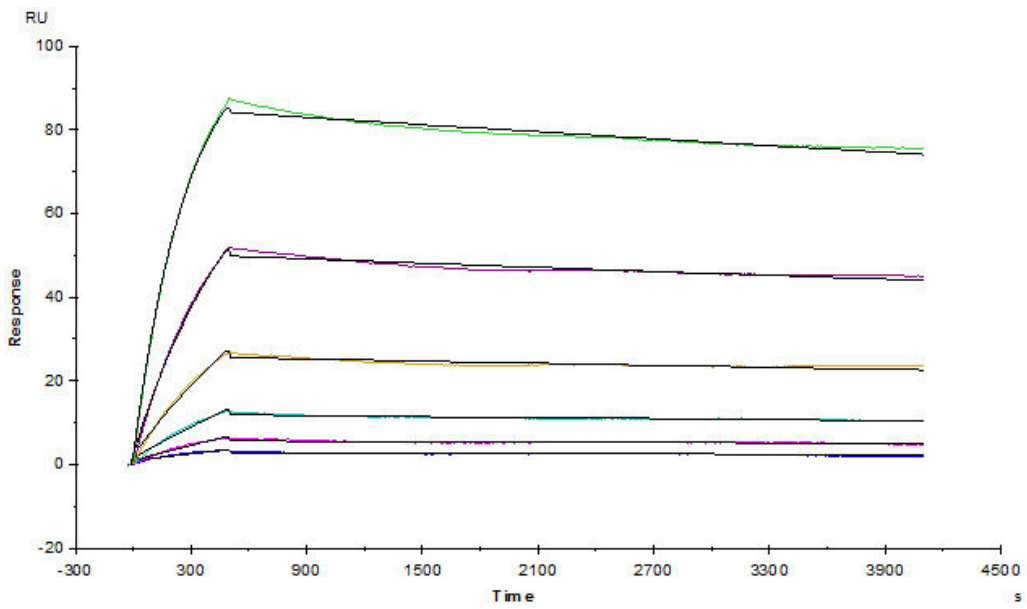
Human VEGF165, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With Star Ribbon Pre-stained Protein Marker).

Bioactivity-ELISA



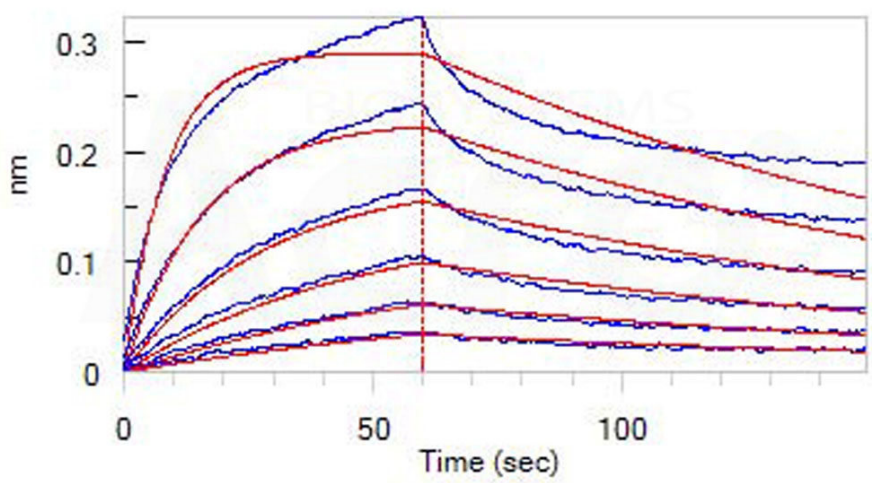
Immobilized Human VEGF R1&VEGF R2, Fc Tag at 2 μg/mL (100 μL/well) can bind Human VEGF165, His Tag (Cat. No. VE5-H5248) with a linear range of 0.004-0.063 μg/mL (QC tested).

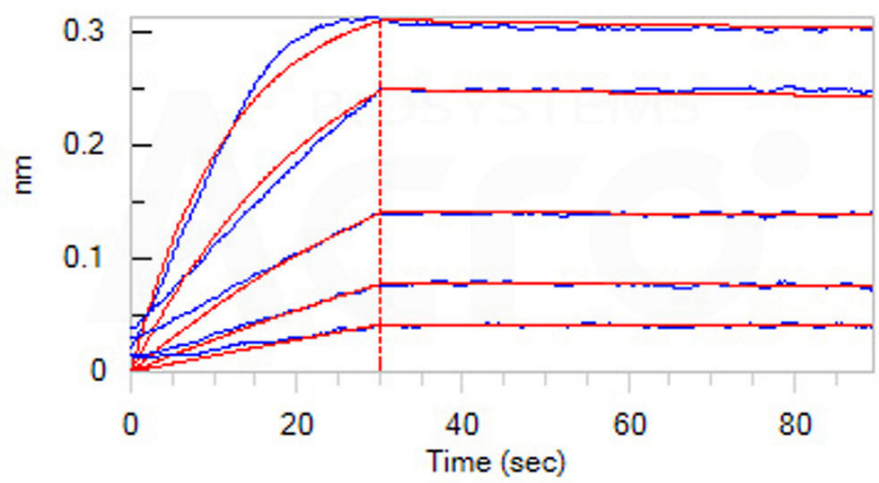
Bioactivity-SPR



Avastin (Bevacizumab) captured on CM5 chip via anti-human IgG Fc antibodies surface, can bind Human VEGF165 Protein, His Tag (Cat. No. VE5-H5248) with an affinity constant of 1.03 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

Bioactivity-BLI





Loaded Human NRP1, Fc Tag (Cat. No. NR1-H5252) on Protein A Biosensor, can bind Human VEGF165, His Tag (Cat. No. VE5-H5248) with an affinity constant of 24.2 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Loaded Biotinylated Human VEGF R1, His,Avitag (Cat. No. VE1-H82E3) on SA Biosensor, can bind Human VEGF165, His Tag (Cat. No. VE5-H5248) with an affinity constant of 0.236 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Background

VEGF165 is the most abundant splice variant of VEGF-A. VEGF165 is produced by a number of cells including endothelial cells, macrophages and T cells. VEGF165 is involved in angiogenesis, vascular endothelial cell survival, growth, migration and vascular permeability. VEGF gene expression is induced by hypoxia, inflammatory cytokines and oncogenes. VEGF165 binds to heparan sulfate and is retained on the cell surface and in the extracellular matrix. VEGF165 binds to the receptor tyrosine kinases, VEGFR1 and VEGFR2. VEGF165 is the only splice variant that binds to co-receptors NRP-1 and NRP-2 that function to enhance VEGFR2 signaling. Binding of VEGF165 to VEGFR1 and VEGFR2 leads to activation of the PI3K/AKT, p38 MAPK, FAK and paxillin. VEGF plays a key role in tumor angiogenesis in many cancers.

Clinical and Translational Updates