

Product datasheet

Recombinant human VEGFA protein (Active) ab155740

[1 References](#) [8 Images](#)

Description

Product name	Recombinant human VEGFA protein (Active)	
Biological activity	<p>The bio-activity was determined by dose-dependent stimulation of the proliferation of HUVEC cells.</p> <p>The ED₅₀ <5ng/ml, corresponding to a specific activity of >2x10⁵ Unit/mg.</p> <p>ab155740 at 2 µg/mL (100 µL/well) can bind Biotinylated Human VEGF R2, His Tag with a linear range of 10-156 ng/mL.</p>	
Purity	<p>> 98 % SDS-PAGE.</p> <p>>95% as determined by SEC-MALS. Purified by ion exchange chromatography.</p>	
Endotoxin level	< 1.000 Eu/µg	
Expression system	HEK 293 cells	
Accession	<u>NP_001165097</u>	
Protein length	Full length protein	
Animal free	No	
Nature	Recombinant	
Species	Human	
Sequence	<p>APMAEGGGQNHHEVVKFMDVYQRSYCHPIETLVDIFQEYP DEIEYFKPS CVPLMRCGGCCNDEGLECVPTTEESNITMQIMRIKPHQGG HIGEMSFLQHN KCECRPKKDRARQENPCGPCSERRKHLFVQDPQTCKCS CKNTDSRCKARQ LELNERTCRCDKPRR</p>	
Predicted molecular weight	19 kDa	
Amino acids	27 to 191	

Specifications

Our **Abpromise guarantee** covers the use of **ab155740** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Functional Studies
	SDS-PAGE

Form Lyophilized

Preparation and Storage

Stability and Storage Shipped at 4°C. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
pH: 7.40
Constituent: PBS

Normally Mannitol or Trehalose are added as protectants before lyophilisation.
This product is an active protein and may elicit a biological response in vivo, handle with caution.

Reconstitution Reconstitute with sterile deionized water to a concentration of 200 µg/ml.

General Info

Function Growth factor active in angiogenesis, vasculogenesis and endothelial cell growth. Induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis and induces permeabilization of blood vessels. Binds to the FLT1/VEGFR1 and KDR/VEGFR2 receptors, heparan sulfate and heparin. NRP1/Neuropilin-1 binds isoforms VEGF-165 and VEGF-145. Isoform VEGF165B binds to KDR but does not activate downstream signaling pathways, does not activate angiogenesis and inhibits tumor growth.

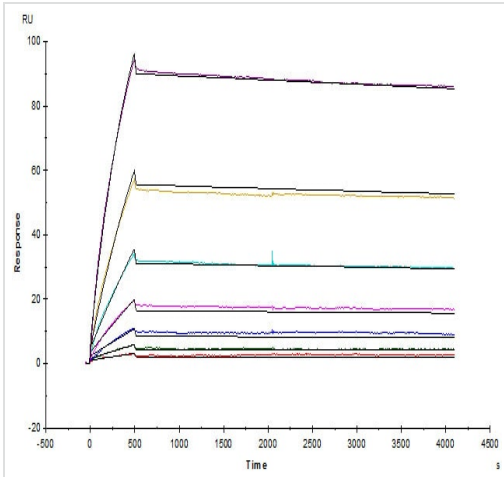
Tissue specificity Isoform VEGF189, isoform VEGF165 and isoform VEGF121 are widely expressed. Isoform VEGF206 and isoform VEGF145 are not widely expressed.

Involvement in disease Defects in VEGFA are a cause of susceptibility to microvascular complications of diabetes type 1 (MVCD1) [MIM:603933]. These are pathological conditions that develop in numerous tissues and organs as a consequence of diabetes mellitus. They include diabetic retinopathy, diabetic nephropathy leading to end-stage renal disease, and diabetic neuropathy. Diabetic retinopathy remains the major cause of new-onset blindness among diabetic adults. It is characterized by vascular permeability and increased tissue ischemia and angiogenesis.

Sequence similarities Belongs to the PDGF/VEGF growth factor family.

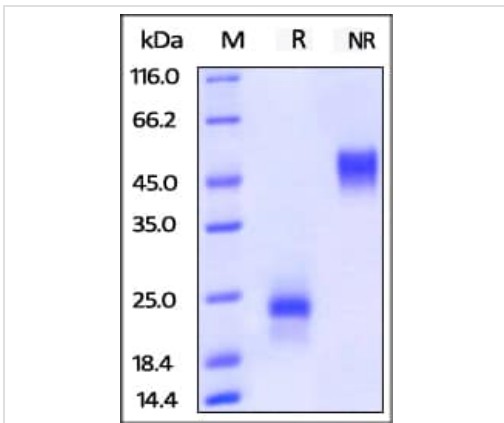
Cellular localization Secreted. VEGF121 is acidic and freely secreted. VEGF165 is more basic, has heparin-binding properties and, although a significant proportion remains cell-associated, most is freely secreted. VEGF189 is very basic, it is cell-associated after secretion and is bound avidly by heparin and the extracellular matrix, although it may be released as a soluble form by heparin, heparinase or plasmin.

Images



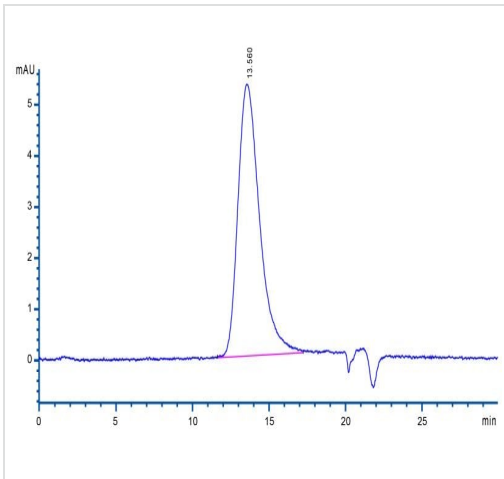
Avastin (Bevacizumab) captured on CM5 chip via ant-human IgG Fc antibodies surface, can bind ab155740 with an affinity constant of 0.776 nM as determined in a SPR assay (Biacore T200).

Functional Studies - Recombinant human VEGFA protein (ab155740)



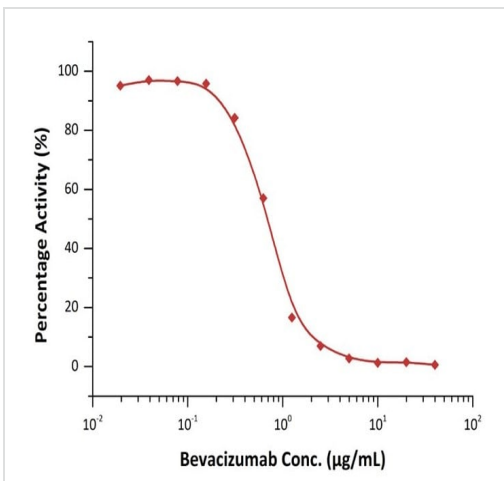
ab155740 on SDS-PAGE under reducing (R) and non-reducing (NR) conditions. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 98%.

SDS-PAGE - Recombinant human VEGFA protein (ab155740)



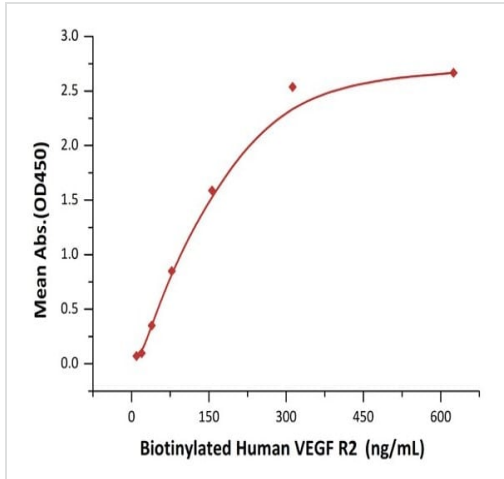
A SEC-HPLC analysis showing 95% of ab155740 present as active homodimers.

Functional Studies - Recombinant human VEGFA protein (ab155740)



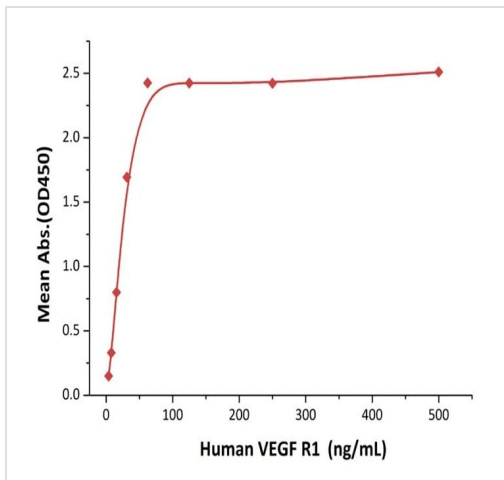
Immobilized ab155740 at 2 µg/mL (100 µL/well) can bind pre-mixed increasing concentrations of Bevacizumab and 0.5 µg/mL (100 µL/well) Biotinylated Human VEGF R2 protein with a half maximal inhibitory concentration (IC₅₀) of 0.70 µg/mL.

Functional Studies - Recombinant human VEGFA protein (Active) (ab155740)



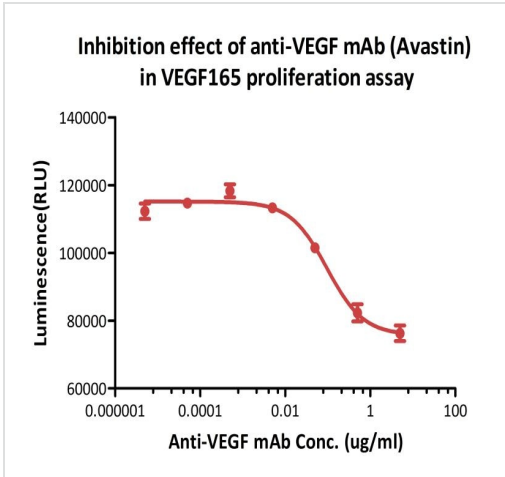
Immobilized ab155740 at 2 µg/mL (100 µL/well) can bind Biotinylated Human VEGF R2 protein with a linear range of 10-156 ng/mL.

Functional Studies - Recombinant human VEGFA protein (Active) (ab155740)



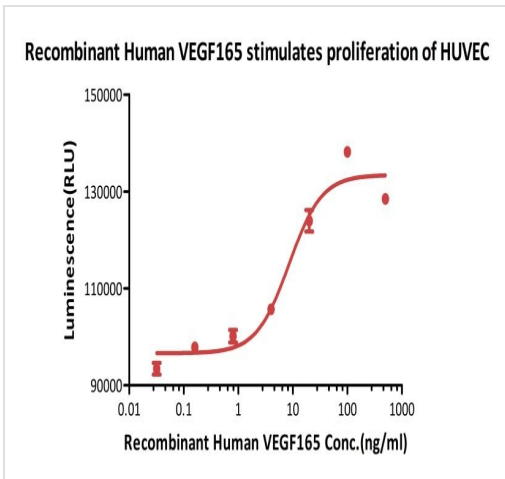
Immobilized ab155740 at 0.01 µg/mL (100 µL/well) can bind Human VEGF R1 protein with a linear range of 4-31 ng/mL.

Functional Studies - Recombinant human VEGFA protein (Active) (ab155740)



Inhibition assay shows that the proliferation effect of ab155740 is inhibited by increasing concentration of anti-VEGF mAb (Avastin). The concentration of VEGF165 used is 20 ng/ml. The ED₅₀ is 0.065-0.229 µg/mL.

Functional Studies - Recombinant human VEGFA protein (ab155740)



ab155740 stimulates proliferation of human umbilical vein endothelial cells (HUVEC). The ED₅₀ for this effect is 4.216-9.281 ng/ml.

Functional Studies - Recombinant human VEGFA protein (ab155740)

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