

Recombinant Human VEGF 165a Active

Human recombinant protein expressed in *Nicotiana benthamiana*

RF0104

Alternative Names: VEGF-A, Vascular permeability factor, VPF

Molecular Formula: C854H1340N274O257S22

UniProtKB: P15692

p.I: 7,65

Molecular Weight:

Recombinant full length VEGF is a 38.2 kDa homodimeric protein consisting of two 165 amino acid polypeptide chains (amino acids 27-191 P15692-4 VEGFA_HUMA) with His tag at N-terminal.

Sequence:

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HHHHHHHHAPMAEGGGQNHHEVVKFMDVYQRSYCHPIETLVDI  
FQEYPDEIEYIFKPSVPLMRCGGCCNDEGLECVPTESNITMQI  
MRIKPHQGGHIGEMSFLLQHNKCECRPKKDRARQENPCGPCSE  
RRKHLFVQDPQTCKCCKNTDSRCKARQLELNERTCRCDKPR  
R
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Formulation:

Recombinant human VEGF is lyophilized from 10mM Phosphate Potassium buffer pH 7.5 and 100 mM NaCl.

Description:

Vascular endothelial growth factor is a member of the platelet-derived growth factor family. It is a specific mitogen for vascular endothelial cells in vitro and a strong angiogenic factor in vivo. Induces endothelial cell proliferation, promotes cell migration, inhibits apoptosis and induces permeabilization of blood vessels. Expressed in vascularized tissues, VEGF plays a prominent role in normal and pathological angiogenesis. In addition to its action as a mitogen it is a potent vascular permeability factor (VPF) in vivo and is also a chemo attractant for monocytes cells.

VEGF binds to the FLT1/VEGFR1 and KDR/VEGFR2 present on endothelial cells. Substantial evidence implicates VEGF in the induction of tumor metastasis by stimulating the production of matrix metalloproteinases (MMPs).

Available sizes: 1 µg, 10 µg, 100 µg, 250 µg of active protein

Ext. Coeff. Abs (280nm) 0.1% (=1g/l) =0.343

Purity >97% by SDS-PAGE gel

Endotoxin Level : < 0.04 EU / µg protein (LAL method)

Source:

Human recombinant protein expressed in *Nicotiana benthamiana*. It is produced by transient expression in non-transgenic plants and is purified by standard protein purification methods. This product contains no animal-derived components or impurities. Animal Free product.

Reconstitution Recommendation:

Lyophilized protein should be reconstituted in water following instructions of batch Quality Control sheet. At higher concentrations the solubility may be reduced and multimers generated. Optimal concentration should be determined for specific application.

Storage and Stability:

This lyophilized preparation is stable at 2-8° C for short term, long storage it should be kept at -20°C. Reconstituted protein should be stored in working aliquots at -20°C. Repeated freezing and thawing is not recommended.

References:

- Ferrara, N., 1999. Molecular and Biological properties of vascular endothelial growth factor. *J. Mol. Med.*, 77 () 527-543.
- Detmar, M., 2000. The role of VEGF and thrombospondins in skin Angiogenesis. *Journal of Dermatological Science*, 24 Suppl. 1 S78-S84.
- Ferrara, N., 2001. Role of vascular endothelial growth factor in regulation of Physiological angiogenesis. *Am. J.Physiol. Cell Physiol.*, 280 C1358-C1366.
- Bao, P. et al., 2009. The role of vascular endothelial growth factor in wound healing. *J Surg Res.*, 153(2):347-58.

For R+D purposes only. Purchaser must determine the suitability of the product(s) for their particular use.

Product(s) expressed through a transient plant system are intrinsically Animal-free

Applications:

Functional studies, Cell assay, SDS-PAGE, Western Blot, Antibody Production.

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Upon this protein has not been tested in a particular technique this not necessarily excludes its use in such procedures.

Purity Confirmation:

The protein was resolved by SDS polyacrylamide gel electrophoresis and the gel was stained with coomassie blue. Fig. 1.

Serological Identification:

The protein was electrophoresed under reducing condition on a 15% SDS-polyacrylamide gel, transferred by electro blotting to a NC membrane and visualized by immune-detection with specific VEGF antibody. Fig. 2.

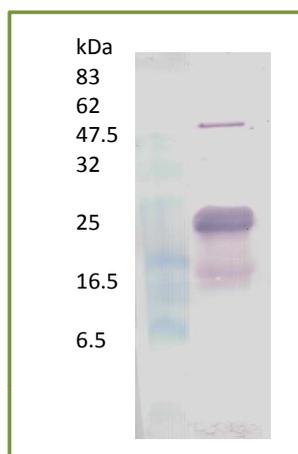
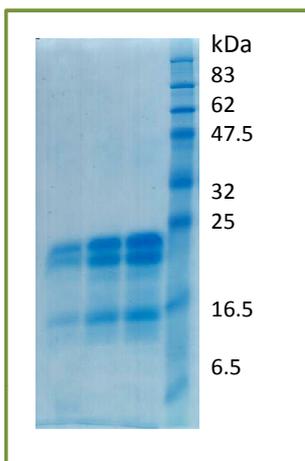


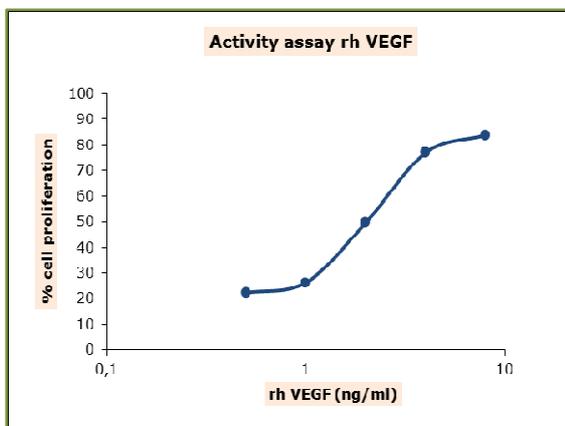
Figure 1. SDS-PAGE analysis of recombinant VEGFA. Samples were loaded in 15% SDS-polyacrylamide gel and stained with Coomassie blue. Lane 4 MWM: Molecular weight marker (kDa); Lane 1-3 contains 0.3, 0.6 and 1 µg of rhuman VEGF. The recombinant protein migrate with an apparent molecular mass of 19-22 kDa under reducing conditions.

Figure 2.- Analysis of rhuman VEGF with specific antibody by Western Blot; Lane 1: Molecular weight marker (MWM; kDa); Lane 2 contains 0.3 µg of rhuman VEGF.

Bioassay:

1. The specific activity is determined by the dose-dependent stimulation of the proliferation of human umbilical vein endothelial cells (HUVEC).

ED50 1-2 ng/ml



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