
**RECOMBINANT HUMAN
VEGF-165 ACF**



IrvineScientific®

2511 Daimler Street, Santa Ana, California 92705-5588 USA

Telephone: 1 949 261 7800 • 1 800 437 5706

Fax: 1 949 261 6522 • www.ivinesci.com

PN 41024 Rev. 0

RECOMBINANT HUMAN VEGF-165 ACF

Catalog No. 95111

INTENDED USE

Recombinant Human VEGF-165 is a carrier-free, animal component-free bioactive recombinant cytokine intended for use in cell culture applications. VEGF-165 is a member of the cysteine-knot growth factor superfamily. VEGF-165 stimulates proliferation, survival and migration of endothelial cells, and promotes angiogenesis and vascular permeability (1).

PRODUCT DESCRIPTION

1. Synonyms

VEGF-A, VPF, glioma-derived endothelial cell mitogen

2. Accession Number

P15692-4

3. Background

Vascular endothelial growth factor-165 (VEGF-165) is a homodimeric glycoprotein consisting of two domains: a heparin-binding domain and a receptor-binding domain. At least five different VEGF isoforms (VEGF-121, VEGF-145, VEGF-165, VEGF-189, VEGF-206) are known in humans, all of which are derived by alternative splicing of VEGF mRNA, but differ in their secretion and heparin-binding properties. Among VEGF isoforms, VEGF-165 is the most common and biologically active. It is an endothelial, cell-specific, and angiogenic growth factor that is a potent vascular permeability factor. VEGF-165 is released by many cell populations, including fibroblasts, monocytes, macrophages and lymphocytes. VEGF-165 induces vessel dilation by releasing nitric oxide and can have a chemotactic impact on other growth-promoting cell populations. VEGF-165 synthesis is stimulated most strongly by the lack of oxygen, an effect that is translated by hypoxia sensitive transcription factor, HIF1. Recombinant human VEGF-165 is a non-glycosylated homodimer, containing two 165 amino acids, with a total molecular weight of 38.2 kDa (2-5).

4. Specifications

Formulation

Recombinant Human VEGF-165 is lyophilized with no additives.

Protein content and Purity

≥95% determined by HPLC, reducing and non-reducing SDS-PAGE, UV spectroscopy at 280nm.

Bioactivity

ED50 is determined by dose-dependent proliferation of HUVECs The ED50 is typically less than 5ng/mL.

Quality and Grade

Carrier-free. Animal component-free.

SHIPPING

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

STORAGE INSTRUCTIONS AND STABILITY

Upon receipt, store the lyophilized protein at or below -10°C in a manual defrost freezer for up to 12 months from date of receipt. Unopened vials are stable for one year from the date of receipt when stored as recommended. Reconstituted material should be apportioned in working volumes and stored at or below -10°C in manual defrost freezer. Reconstituted material is stable for 4-6 weeks when stored at or below -10°C and for 3-12 months at -80°C. Stability can be increased by adding at least 0.1% of carrier protein.

PRECAUTIONS AND WARNINGS

This product is for research or further manufacturing use only. It is not for use in diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

DIRECTIONS FOR USE

1. Reconstitution

Centrifuge vials before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile water at a concentration of 0.1 mg/mL, which can be further diluted into other aqueous solutions.

2. Optimum concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

REFERENCES

- Porter AM, Klinge CM, Gobin AS (2011) Covalently grafted VEGF(165) in hydrogel models upregulates the cellular pathways associated with angiogenesis. *Am. J. Physiol. Cell Physiol.* 301(5): C1086-92
- Sosic A, Meneghello A, Antognoli A, Cretajo E, Gatto B (2013) Development of a Multiplex Sandwich Aptamer Microarray for the Detection of VEGF165 and Thrombin. *Sensors.* 13: 13425-13438
- Enomoto H, Inoki I, Komiya K, Shiomi T, Ikeda E, Obata K, Matsumoto H, Toyama Y, Okada Y (2003) Vascular endothelial growth factor isoforms and their receptors are expressed in human osteoarthritic cartilage. *Am. J. Pathol.* 162(1): 171-181
- Mühlhauser J, Merrill MJ, Pili R, Maeda H, Bacic M, Bewig B, Passaniti A, Edwards NA, Crystal RG, Capogrossi MC (1995) VEGF165 Expressed by a Replication-Deficient Recombinant Adenovirus Vector Induces Angiogenesis In Vivo. *Circulation Research* 77: 1077-1086
- Kleinheinz J, Jung S, Wermker K, Fischer C, Joos U (2010) Release kinetics of VEGF165 from a collagen matrix and structural matrix changes in a circulation model. *Head & Face Medicine* 6: 17-23