

## Recombinant Human VEGF-165 ACF

Catalog #	Product	Size
95111	Recombinant Human VEGF-165 ACF	10 µg

### 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.

## Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis which is available upon request.

## 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  $-10^{\circ}\text{C}$  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  $-10^{\circ}\text{C}$  in manual defrost freezer. Reconstituted material is stable for 4-6 weeks when stored at or below  $-10^{\circ}\text{C}$  and for 3-12 months at  $-80^{\circ}\text{C}$ . Stability can be increased by adding at least 0.1% of carrier protein.

## Precautions

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

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### 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

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1. 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
2. Sosis A, Meneghello A, Antognoli A, Cretaiu E, Gatto B (2013) Development of a Multiplex Sandwich Aptamer Microarray for the Detection of VEGF165 and Thrombin. *Sensors.* 13: 13425-13438
3. 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
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5. 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

## Technical Support

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### CONTACT US

For more information or assistance contact Customer Service at:

- Email: [fisitmrequest@fujifilm.com](mailto:fisitmrequest@fujifilm.com)
- Direct line: +1 800 577 6097

### WEBSITE RESOURCES

Visit the website at [www.irvinesci.com](http://www.irvinesci.com) for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature
- Complete list of offices and contact information by country

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