

Recombinant Rat Vascular Endothelial Growth Factor (VEGF-A)

Certificate of Analysis and Data Sheet

➤ Source: E.Coli	➤ Catalog No. CTK-392
----------------------------	---------------------------------

➤ **Background:**

Vascular endothelial growth factor-A was originally isolated from tumor cells and referred to as Tumor Angiogenesis Factor or Vascular Permeability Factor. Although expressed at high levels in certain tumor-derived cells it is produced by a wide variety of cell types. In addition to stimulating vascular growth and vascular permeability it may play a role in stimulating Vasolidation via nitric oxide-dependent pathways. Alternative splicing of the mRNA for VEGF-A results in several isoforms of the protein being produced. Rat and bovine VEGF are one amino acid shorter than the human factor, and the bovine and human sequences show a homology of 95 percent. In contrast to other factors mitogenic for endothelial cells such as FGF-1 , FGF-2 and PDGF, VEGF is synthesized as a precursor containing a typical hydrophobic secretory signal sequence of 26 amino acids. Glycosylation is not required for efficient secretion of VEGF.

➤ **Description :**

Recombinant Rat VEGF produced in E.Coli is a double, non-glycosylated, polypeptide chain containing 164 amino acids and having a molecular mass of 38417 Dalton.

Rat VEGF is purified by proprietary chromatographic techniques.

➤ **Physical Appearance:**

Sterile Filtered White lyophilized (freeze-dried) powder.

➤ **Formulation:**

Recombinant VEGF was lyophilized from a concentrated (1mg/ml) solution with no additives.

➤ **Solubility:**

It is recommended to reconstitute the lyophilized VEGF in sterile 18MΩ-cm H₂O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

➤ **Stability:**

Lyophilized Vascular Endothelial Growth Factor although stable at room temperature for 3 weeks, should be stored desiccated below -18°C . Upon reconstitution rVEGF should be stored at 4°C between 2-7 days and for future use below -18°C . For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Please prevent freeze-thaw cycles.

➤ **Purity:**

Greater than 95.0% as determined by:

- (a) Analysis by RP-HPLC.
- (b) Anion-exchange FPLC.
- (c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

➤ **Amino acid sequence:**

The sequence of the first five N-terminal amino acids was determined and was found to be Met-Ala-Pro-Thr-Thr.

➤ **Dimers and aggregates:**

Less than 1% as determined by silver-stained SDS-PAGE gel analysis.

➤ **Biological Activity:**

Determined by the dose-dependent stimulation of the proliferation of human umbilical vein endothelial cells (HUVEC) using a concentration range of 10-100 ng/ml.

➤ **Endotoxin:**

Less than 0.1 ng/ μg (IEU/ μg) of Rat VEGF.

➤ **Protein content:**

Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm.
2. Analysis by RP-HPLC, using a calibrated solution of VEGF as a Reference Standard.

➤ **Usage:**

This material is offered for research, laboratory or further manufacturing purposes.