

## Product Information

### Vascular Endothelial Growth Factor, human recombinant, expressed in *E. coli*

Catalog Number **V7259**

Storage Temperature  $-20\text{ }^{\circ}\text{C}$

CAS RN 127464-60-2

Synonyms: VEGF, vasculotropin

#### Product Description

Vascular Endothelial Growth Factor (VEGF) is an angiogenic growth factor, which is heat and acid stable. VEGFs stimulate endothelial cell growth, angiogenesis, and capillary permeability. VEGF is a secreted homodimeric, heparin-binding glycoprotein,<sup>1</sup> which has an isoelectric point of 8.5.<sup>2</sup> VEGF promotes the growth of endothelial cells isolated from bovine adrenal cortex, cerebral cortex, fetal and adult aorta, and human umbilical vein.<sup>2</sup>

The target cell specificity of VEGF is restricted to vascular endothelial cells.<sup>2</sup> VEGF has no mitogenic effect on cultured corneal endothelial cells, vascular smooth muscle cells, BHK-12 fibroblasts, keratinocytes, human sarcoma cells, or lens epithelial cells.<sup>2</sup> A variety of human tumor cell lines including sarcoma and carcinoma cells show a 3.7 kb RNA transcript that hybridizes with the VEGF probe in a Northern blot.<sup>2</sup> Mouse sarcoma 180 cells express the VEGF mRNA and secrete a VEGF-like mitogen.<sup>3</sup> Four cDNA clones, arising through alternative slicing and encoding mature human monomeric VEGF with 121, 165, 189, or 206 amino acids, have been identified.

This product is lyophilized from a sterile filtered buffered solution with no additives. It is a homodimer protein of the 165 amino acid splice variant,<sup>4</sup> with a calculated molecular mass of 38.2 kDa.

Purity:  $\geq 97\%$  (SDS-PAGE)

The biological activity of human recombinant VEGF is measured by its mitogenic activity on human umbilical vein endothelial cells.

Endotoxin:  $\leq 0.1$  EU/ $\mu\text{g}$  protein

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Preparation Instructions

Reconstitute the contents of the vial in water to a concentration of 0.1–1.0 mg/ml. After reconstitution, this solution can then be diluted into other aqueous buffers.

#### Storage/Stability

Store the product at  $-20\text{ }^{\circ}\text{C}$ . The lyophilized protein is stable for up to a few weeks at  $2\text{--}8\text{ }^{\circ}\text{C}$ , but is best stored at  $-20\text{ }^{\circ}\text{C}$ .

Reconstituted VEGF can be stored at  $2\text{--}8\text{ }^{\circ}\text{C}$  for up to one week. For prolonged use, freeze in working aliquots at  $-20\text{ }^{\circ}\text{C}$ . Repeated freezing and thawing is not recommended.

#### References

1. Ferrara, N., and Henzel, W.J., Pituitary follicular cells secrete a novel heparin-binding growth factor specific for vascular endothelial cells. *Biochem. Biophys. Res. Commun.*, **161**, 851 (1989).
2. Ferrara, N. et al., Molecular and biological properties of the vascular endothelial growth factor family of proteins., *Endo. Rev.*, **13**, 18 (1992).
3. Clauss, M. et al., Vascular permeability factor: a tumor-derived polypeptide that induces endothelial cell and monocyte procoagulant activity, and promotes monocyte migration., *J. Exp. Med.*, **172**, 1535 (1990).
4. Leung, D.W. et al., Vascular endothelial growth factor is a secreted angiogenic mitogen., *Science*, **246**, 1306 (1989).

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