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Product Information

Vascular Endothelial Growth Factor (aa 207-318), human, recombinant, expressed in *E. coli*

Catalog Number **V3388**
Storage Temperature –20 °C

Synonyms: Vasculotropin

Product Description

Recombinant human Vascular Endothelial Growth Factor (aa 207-318) is produced from a DNA sequence encoding the 112 amino acid residue variant of human VEGF.[1] The disulfide-linked homodimeric human $VEGF_{112}$ has a predicted molecular mass of ~28 kDa.

Vascular Endothelial Growth Factor (VEGF), also known as vasculotropin, is an angiogenic growth factor which is heat and acid stable.[2] VEGF is a basic protein, with an isoelectric point of 8.5.[3] There is ~88% homology between human and rat VEGF. Rat VEGF is active on human cells and vice versa.[4] VEGF promotes the growth of endothelial cells isolated from bovine adrenal cortex, cerebral cortex, fetal and adult aorta, and human umbilical vein.[3]

The target cell specificity of VEGF is restricted to vascular endothelial cells.[3] 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.[3] 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.[3] Four cDNA clones arising through alternative slicing and encoding mature human monomeric VEGF with 121, 165, 189, or 206 amino acids have been identified.[1] Two receptor tyrosine kinases, VEGFR-1 and VEGFR-2 (KDR), have been shown to bind VEGF with high affinity.[5]

The product is lyophilized from a 0.2 μm filtered solution of 30% acetonitrile and 0.1% trifluoroacetic acid (TFA) with 250 μg of bovine serum albumin as carrier protein.

Purity: ≥97% (SDS-PAGE, visualized by silver stain)

Endotoxin level: <1.0 EU/μg cytokine
(LAL [Limulus amebocyte lysate] method)

The biological activity of recombinant human VEGF (aa 207-318) is measured by its ability to stimulate ^{3}H-thymidine incorporation in human umbilical vein endothelial cells.[6]

ED_{50} for this effect is 0.75–3.75 ng/ml.

The ED_{50} is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

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 using 0.2 μm filtered phosphate-buffered saline (PBS) containing 0.1% human serum albumin or bovine serum albumin to a final concentration of ≥50 μg/ml.

Storage/Stability

Store the product at –20 °C.

After reconstitution, store at 2–8 °C for a maximum of 3 months. For extended storage, freeze in working aliquots at –70 °C or –20 °C. Repeated freezing and thawing is not recommended.

References

1. Leung, D. et al., Science, **246**, 1306 (1989).
2. Claffey, K.P. et al., J. Biol. Chem., **267**, 16317 (1992).
3. Ferrara, N. et al., Endocrine Reviews, **13**, 18 (1992).
4. Clauss, M. et al., J. Exp. Med., **172**, 1535 (1990).
5. Robinson, C.J., and Springer, S.E., J. Cell Sci., **114**, 853 (2001).
6. Conn, G., et al., Proc. Natl. Acad. Sci. USA, **87**, 1323 (1990).

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