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Product Information

Vascular Endothelial Growth Factor 164 from rat
recombinant, expressed in mouse NSO cells

Catalog Number **V3638**
Storage Temperature –20 °C

Product Description

Recombinant Rat Vascular Endothelial Growth Factor 164 ($VEGF_{164}$) is produced from a DNA sequence encoding rat $VEGF_{164}$. The recombinant disulfide-linked homodimeric growth factor is glycosylated. Dimeric and monomeric recombinant rat $VEGF_{164}$ migrate as 50 kDa and 25 kDa proteins on SDS-PAGE, respectively.

Vascular Endothelial Growth Factor (VEGF), also known as vasculotropin, is an angiogenic growth factor which is heat and acid stable.[1] VEGF is a basic protein, with an isoelectric point of 8.5.[2] There is about 88% homology between human and rat VEGF. Rat VEGF is active on human cells and vice versa.[3] VEGF promotes the growth of endothelial cells isolated from bovine adrenal cortex, cerebral cortex, fetal and adult aorta, and human umbilical vein.[2]

The target cell specificity of VEGF is restricted to vascular endothelial cells.[2] 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.[2]

Four rat cDNA clones have been identified. These arise from alternative splicing and encode mature rat VEGF monomers of 120, 144, 164, and 188 amino acids. Two receptor tyrosine kinases, VEGFR-1 and VEGFR-2, have been shown to bind VEGF with high affinity.[4]

Recombinant Rat $VEGF_{164}$ is supplied as 10 µg of protein lyophilized from a 0.2 µm-filtered solution of 30% acetonitrile and 0.1% trifluoroacetic acid (TFA) with 500 µg of bovine serum albumin as carrier protein.

The biological activity of Recombinant Rat $VEGF_{164}$ is measured by its ability to stimulate ^{3}H-thymidine incorporation in human umbilical vein endothelial cells.[5]

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.

Purity: >95% (SDS-PAGE, visualized by silver stain)

Endotoxin level is < 0.1 ng/µg $VEGF_{164}$ as determined by the LAL (Limulus amebocyte lysate) method.

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 not less than 1 µg/ml.

Storage/Stability

Store the product at –20 °C. After reconstitution, store at 2 to 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. Claffey, K.P., et al., *J. Biol. Chem.*, **267**, 16317 (1992).
2. Ferrara, N., et al., *Endocrine Reviews*, **13**, 18 (1992).
3. Clauss, M., et al., *J. Exp. Med.*, **172**, 1535 (1990).
4. Robinson, C.J., and Springer, S.E., *J. Cell Sci.*, **114**, 853 (2001).
5. Conn, G., et al., *Proc. Natl. Acad. Sci. USA*, **87**, 1323 (1990).

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