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#5874

## Rat Vascular Endothelial Growth Factor-164 (rVEGF<sub>164</sub>)

10 µg

**For Research Use Only. Not for Use in Diagnostic Procedures.**

**UniProt ID:**  
#P16612

**Entrez-Gene Id:**  
83785

### Background

VEGF<sub>164</sub> is one of many splice variants of the VEGF-A gene, and is one amino acid shorter than its human counterpart, VEGF<sub>165</sub> (1, 2). VEGF<sub>164</sub> is produced by a number of cells including endothelial cells, macrophages, and T cells (1, 2). VEGF<sub>164</sub> is involved in angiogenesis, vascular endothelial cell survival, growth, migration, and vascular permeability (1,2). Gene expression is induced by hypoxia, inflammatory cytokines, and oncogenes (1, 2). VEGF<sub>164</sub> binds to heparan sulfate and is retained on the cell surface and in the extracellular matrix (1-3). VEGFR1 and VEGFR2 are the receptor tyrosine kinases for VEGF<sub>164</sub> (2). NRP-1 and NRP-2 may function as co-receptors and enhance VEGFR2 signaling (2-3). Binding of VEGF<sub>164</sub> to VEGFR1 and VEGFR2 leads to activation of the PI3K/AKT, p38 MAPK, FAK, and Paxillin (2).

### Endotoxin

Less than 0.01 ng endotoxin/1 µg rVEGF<sub>164</sub>.

### Purity

>98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant rVEGF<sub>164</sub>. All lots are greater than 98% pure.

### Source / Purification

Recombinant rat VEGF<sub>164</sub> (rVEGF<sub>164</sub>) Ala27-Arg190 (Accession #NP\_001103803) was expressed in human 293 cells at Cell Signaling Technology.

### Bioactivity

The bioactivity of recombinant rVEGF<sub>164</sub> was determined in a cell proliferation assay using HUVEC. The ED<sub>50</sub> of each lot is between 1-5 ng/ml.

### Background References

1. Haigh, J.J. (2008) *Organogenesis* 4, 247-56.
2. Takahashi, H. and Shibuya, M. (2005) *Clin Sci (Lond)* 109, 227-41.
3. Neufeld, G. et al. (1999) *FASEB J* 13, 9-22.

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