# Recombinant Canine VEGF

Catalog Number: 1603-CV/CF

## DESCRIPTION

| | |
|---|---|
| **Source** | *E. coli*-derived<br>Pro28-Arg190<br>Accession # AAD29682 |
| **N-terminal Sequence Analysis** | Pro28 |
| **Structure / Form** | Disulfide-linked homodimer |
| **Predicted Molecular Mass** | 19 kDa (monomer) |

## SPECIFICATIONS

| | |
|---|---|
| **Activity** | Measured in a cell proliferation assay using HUVEC human umbilical vein endothelial cells. Conn, G. *et al.* (1990) Proc. Natl. Acad. Sci. USA **87**:1323.<br>The $ED_{50}$ for this effect is 1.5-7.5 ng/mL. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE under reducing conditions and visualized by silver stain. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

| | |
|---|---|
| **Reconstitution** | Reconstitute at 100 µg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

## BACKGROUND

Vascular endothelial growth factor (VEGF or VEGF-A), also known as vascular permeability factor (VPF), is a potent mediator of both angiogenesis and vasculogenesis in the fetus and adult. It is a member of the PDGF family that is characterized by the presence of eight conserved cysteine residues. In human, at least eight alternately spliced isoforms of VEGF ranging from 206 amino acids (aa) to 121 aa in length are known. Three isoforms, $VEGF_{188}$, $VEGF_{182}$, and $VEGF_{164}$, have been identified in canine. Canine $VEGF_{164}$ shares 91%, 90%, and 98% aa sequence identity with the rat, mouse, and feline homologs, respectively. Two type I transmembrane receptor tyrosine kinases, VEGF R1 and VEGF R2, that bind VEGF with high affinity, have been identified. Neuropilin-1, a receptor for semaphorin, also binds VEGF and acts as a co-receptor to enhance the affinity between VEGF and VEGF R2. Neuropilin-1 alone can also mediate VEGF-induced endothelial cell migration. VEGF regulates cell proliferation, migration, and survival of endothelial cells. These functions are partially mediated through the induction of nitric oxide, prostacyclin, and metalloproteinases. Together with angiopoietins or other vascular-specific growth factors, VEGF plays a separate but complementary role in angiogenesis and vasculogenesis (1 - 7).

**References:**


1. JingJing, L. *et al.* (2000) Mol. Cell Biochem. **214**:23.
2. Scheidegger, P. *et al.* (1999) Biol. Chem. **380**:1449.
3. Thurston, G. (2002) J. Anat. **200**:575.
4. Zachary, I. and Gliki, G. (2001) Cardiovasc. Res. **49**:568.
5. Chevalier, S. (2002) Mol. Cell Endocrinol.1**89**:169.
6. Robinson, C.J. and Stringer, S.E. (2001) J. Cell. Sci. **114**:853.
7. Wang, L. *et al.* (2003) J. Biol. Chem. **278**:48848.




bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449