

DESCRIPTION	
Species Reactivity	Canine
Specificity	Detects canine VEGF ₁₆₄ in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 50% cross-reactivity with recombinant human VEGF, recombinant mouse VEGF, and recombinant rat VEGF is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant canine VEGF ₁₆₄ Pro28-Arg190 Accession # Q9MYV3
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Canine VEGF (Catalog # 1603-CV)
Immunocytochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize VEGF-induced proliferation in HUVEC human umbilical vein endothelial cells. The Neutralization Dose (ND ₅₀) is typically 0.04-0.10 µg/mL in the presence of 15 ng/mL Recombinant Canine VEGF.	

DATA

Neutralization

Cell Proliferation Induced by VEGF and Neutralization by Canine VEGF Antibody. Recombinant Canine VEGF (Catalog # 1603-CV) stimulates proliferation in HUVEC human umbilical vein endothelial cells in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Canine VEGF (15 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Canine VEGF₁₆₄ Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1603). The ND₅₀ is typically 0.04-0.10 µg/mL.

Immunocytochemistry

VEGF in Canine PBMCs. VEGF was detected in immersion fixed canine peripheral blood mononuclear cells (PBMCs) using Goat Anti-Canine VEGF 164 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1603) at 15 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cell secretion. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 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, VEGF₁₈₈, VEGF₁₈₂, and VEGF₁₆₄, have been identified in canine. Canine VEGF₁₆₄ 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:

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6. Robinson, C.J. and Stringer, S.E. (2001) *J. Cell. Sci.* **114**:853.
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