

## DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat VEGF in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant human (rh) VEGF <sub>165</sub> and rhVEGF <sub>121</sub> is observed and less than 2% cross-reactivity with rhVEGF-B, recombinant mouse (rm) VEGF-B, rhVEGF-C, rhVEGF-D, and rmVEGF-D is observed. In Western blots, detection of recombinant mouse VEGF <sub>165</sub> is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant rat VEGF <sub>164</sub> Ala27-Arg190 Accession # AAL07526
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

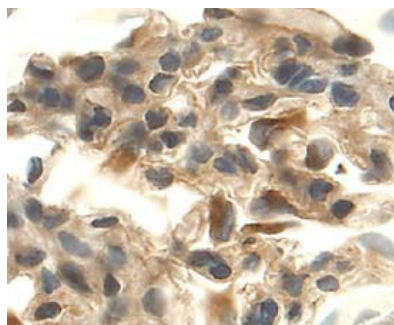
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	0.1 µg/mL	See Below
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below
<b>Neutralization</b>	Measured by its ability to neutralize VEGF <sub>164</sub> -induced proliferation in HUVEC human umbilical vein endothelial cells. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.2-0.6 µg/mL in the presence of 20 ng/mL Recombinant Rat VEGF <sub>164</sub> .	

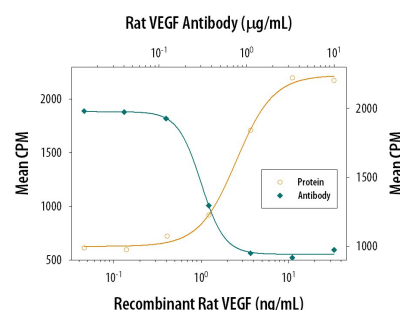
## DATA

### Immunohistochemistry



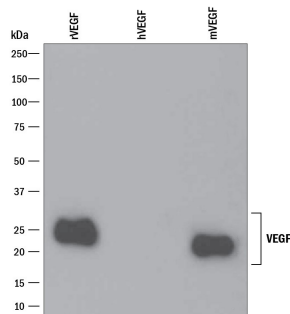
**VEGF<sub>164</sub> in Rat Kidney.**  
VEGF<sub>164</sub> was detected in perfusion fixed frozen sections of rat kidney using 15 µg/mL Goat Anti-Rat VEGF<sub>164</sub> Antigen Affinity-purified Polyclonal Antibody (Catalog # AF564) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

### Neutralization



**Cell Proliferation Induced by VEGF<sub>164</sub> and Neutralization by Rat VEGF Antibody.**  
Recombinant Rat VEGF<sub>164</sub> (Catalog # 564-RV) stimulates proliferation in HUVEC human umbilical vein endothelial cells in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat VEGF<sub>164</sub> (20 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Rat VEGF<sub>164</sub> Antigen Affinity-purified Polyclonal Antibody (Catalog # AF564). The ND<sub>50</sub> is typically 0.2-0.6 µg/mL.

### Western Blot



**Detection of Recombinant Rat and Mouse VEGF by Western Blot.**  
Western blot shows 25 ng of Recombinant Rat VEGF<sub>164</sub> (Catalog # 564-RV), Recombinant Human VEGF<sub>165</sub> (Catalog # 293-VE) and Recombinant Mouse VEGF<sub>164</sub> (Catalog # 493-MV). PVDF Membrane was probed with 0.1 µg/mL of Goat Anti-Rat VEGF<sub>164</sub> Antigen Affinity-purified Polyclonal Antibody (Catalog # AF564) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). A specific band was detected for VEGF at approximately 20-25 kDa (as indicated). This experiment was conducted under reducing conditions and using [Immunoblot Buffer Group 3](#).  
  
*This antibody does not detect natural VEGF in lysates from cell lines or tissues.*

#### PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

#### 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 and a cystine knot structure. VEGF164 appears to be the most abundant and potent isoform, followed by VEGF120 and VEGF188. Rat VEGF164 is an approximately 25 kDa molecular weight protein sharing 97% aa sequence identity with corresponding regions of mouse, 88% with human and bovine, 90% with feline and equine, and 89% with canine and porcine VEGF, respectively. VEGF binds the type I transmembrane receptor tyrosine kinases VEGF R1 (also called Flt-1) and VEGF R2 (Flk-1/KDR) on endothelial cells. Although VEGF affinity is highest for binding to VEGF R1, VEGF R2 appears to be the primary mediator of VEGF angiogenic activity. Human VEGF165 binds the Semaphorin receptor, Neuropilin-1 and promotes complex formation with VEGF R2. VEGF is required during embryogenesis and functions to regulate the proliferation, migration, and survival of endothelial cells. In adults, VEGF functions mainly in wound healing and the female reproductive cycle. Pathologically, it is involved in tumor angiogenesis and vascular leakage. Circulating VEGF levels correlate with disease activity in autoimmune diseases such as rheumatoid arthritis, multiple sclerosis and systemic lupus erythematosus. VEGF is induced by hypoxia and cytokines such as IL-1, IL-6, IL-8, Oncostatin M (OSM) and TNF-alpha.