Human $VEGF_{165}$ Antibody

Polyclonal Goat IgG

Catalog Number: AB-293-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human $VEGF_{165}$ and human $VEGF_{121}$ in direct ELISAs and Western blots. In direct ELISAs, less than 10% cross-reactivity with recombinant mouse VEGF and recombinant rat VEGF is observed.
Source	Polyclonal Goat IgG
Purification	Protein A or G purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human $VEGF_{165}$ Ala27-Arg191 Accession # AAV38412
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.

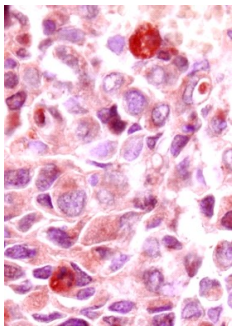
APPLICATIONS

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	1 µg/mL	Recombinant Human $VEGF_{165}$ (Catalog # 293-VE)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize $VEGF_{165}$-induced proliferation in HUVEC human umbilical vein endothelial cells. Conn, G. *et al.* (1990) Proc. Natl. Acad. Sci USA **87**:1323. The Neutralization Dose (ND_{50}) is typically 0.6–3.0 µg/mL in the presence of 10 ng/mL Recombinant Human $VEGF_{165}$.	

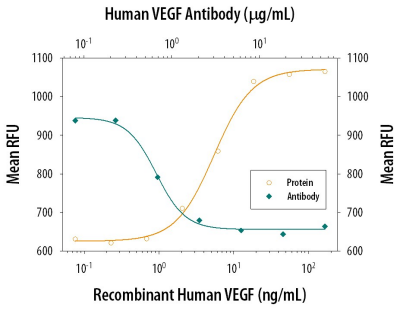
DATA

Immunohistochemistry



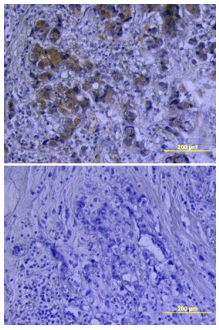
$VEGF_{165}$ in Human Breast Cancer Tissue. $VEGF_{165}$ was detected in immersion fixed frozen sections of human breast cancer tissue using 5 µg/mL Human $VEGF_{165}$ Polyclonal Antibody (Catalog # AB–293–NA) overnight at 4 °C. Tissue was stained (red) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Neutralization



Cell Proliferation Induced by $VEGF_{165}$ and Neutralization by Human VEGF Antibody. Recombinant Human $VEGF_{165}$ (Catalog # 293-VE) stimulates proliferation in HUVEC human umbilical vein endothelial cells in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human $VEGF_{165}$ (10 ng/mL) is neutralized (green line) by increasing concentrations of Human VEGF 165 Polyclonal Antibody (Catalog # AB-293-NA). The ND_{50} is typically 0.6-3.0 µg/mL.

Immunohistochemistry



VEGF in Human Breast Cancer Tissue. VEGF was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Human VEGF 165 Polyclonal Antibody (Catalog # AB-293-NA) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 mg/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.** ● 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.

Human $VEGF_{165}$ Antibody

Polyclonal Goat IgG
Catalog Number: AB-293-NA

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 (1–3). It is a member of the PDGF family that is characterized by the presence of eight conserved cysteine residues and a cystine knot structure (4). Humans express alternately spliced isoforms of 121, 145, 165, 183, 189, and 206 amino acids (aa) in length (4). $VEGF_{165}$ appears to be the most abundant and potent isoform, followed by $VEGF_{121}$ and $VEGF_{189}$ (3, 4). Isoforms other than $VEGF_{121}$ contain basic heparin-binding regions and are not freely diffusible (4). Human $VEGF_{165}$ shares 88% aa sequence identity with corresponding regions of mouse and rat, 96% with porcine, 95% with canine, and 93% with feline, equine and bovine 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 (4). Although VEGF affinity is highest for binding to VEGF R1, VEGF R2 appears to be the primary mediator of VEGF angiogenic activity (3, 4). $VEGF_{165}$ binds the semaphorin receptor, Neuropilin-1 and promotes complex formation with VEGF R2 (5). VEGF is required during embryogenesis to regulate the proliferation, migration, and survival of endothelial cells (3, 4). In adults, VEGF functions mainly in wound healing and the female reproductive cycle (3). Pathologically, it is involved in tumor angiogenesis and vascular leakage (6, 7). Circulating VEGF levels correlate with disease activity in autoimmune diseases such as rheumatoid arthritis, multiple sclerosis and systemic lupus erythematosus (8). VEGF is induced by hypoxia and cytokines such as IL-1, IL-6, IL-8, oncostatin M and TNF-α (3, 4, 9).

References:

1. Leung, D.W. *et al.* (1989) Science **246**:1306.
2. Keck, P.J. *et al.* (1989) Science **246**:1309.
3. Byrne, A.M. *et al.* (2005) J. Cell. Mol. Med. **9**:777.
4. Robinson, C.J. and S.E. Stringer (2001) J. Cell. Sci. **114**:853.
5. Pan, Q. *et al.* (2007) J. Biol. Chem. **282**:24049.
6. Weis, S.M. and D.A. Cheresh (2005) Nature **437**:497.
7. Thurston, G. (2002) J. Anat. **200**:575.
8. Carvalho, J.F. *et al.* (2007) J. Clin. Immunol. **27**:246.
9. Angelo, L.S. and R. Kurzrock (2007) Clin. Cancer Res. **13**:2825.