

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat VEGF ₁₆₄ in direct ELISAs and Western blots. Shows 50 - 100% cross-reactivity with recombinant mouse (rm) VEGF ₁₂₀ , rmVEGF ₁₆₄ , recombinant human (rh) VEGF ₁₂₁ , rhVEGF ₁₆₅ , and rhVEGF ₁₈₉ and no cross-reactivity with rmVEGF ₁₁₅ . Recognizes an epitope found between amino acids 78-120 of rmVEGF ₁₂₀ . This segment is present in all VEGF isoforms except rmVEGF ₁₁₅ .
Source	Monoclonal Mouse IgG _{2B} Clone # 123704
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat VEGF ₁₆₄ Ala27-Arg190 Accession # AAA41211.1
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	1 µg/mL	Recombinant Rat VEGF ₁₆₄ (Catalog # 564-RV) under non-reducing conditions only
Rat VEGF Sandwich Immunoassay		Reagent
ELISA Capture	2-8 µg/mL	Rat VEGF ₁₆₄ Antibody (Catalog # MAB564)
ELISA Detection Standard	0.1-0.4 µg/mL	Rat VEGF Biotinylated Antibody (Catalog # BAF564) Recombinant Rat VEGF ₁₆₄ (Catalog # 564-RV)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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 (1-3). It is a member of the PDGF family that is characterized by a cysteine-knot structure formed by eight conserved cysteine residues (4). Alternately spliced isoforms of 121, 145, 165, 183, 189, and 206 amino acids (aa) have been identified in humans, with 120, 164, and 188 aa isoforms found in rat and mouse (2, 4). Isoforms other than VEGF₁₂₀ and VEGF₁₂₁ contain basic heparin-binding regions and are not freely diffusible (4). Rat VEGF₁₆₄ shares 97% aa sequence identity with corresponding regions of mouse, 88% with human and bovine, 89% with porcine and canine, and 90% with feline and equine 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 affinity is highest for binding to VEGF R1, VEGF R2 appears to be the primary mediator of VEGF angiogenic activity (3, 4). Human VEGF₁₆₅ 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:

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