

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse VEGF-B ₁₆₇ and mouse VEGF-B ₁₈₆ in direct ELISAs and Western blots. In direct ELISAs, approximately 40% cross-reactivity with rhVEGF-B ₁₈₆ is observed, 15% cross-reactivity with rhVEGF-B ₁₆₇
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse VEGF-B ₁₈₆ Pro22-Ala107 Accession # P49766
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Blockade of Receptor-ligand Interaction	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Vascular endothelial growth factor B (VEGF-B; also known as VFR) is a member of the VEGF-PDGF supergene family of growth factor molecules (1 - 4). Five mouse members have been identified, including VEGF-A, -B, -C, -D, and PlGF(-2) (1, 5). VEGF family members are disulfide-linked homo- and heterodimeric proteins that are important regulators of vasculogenesis and lymphangiogenesis. Mouse VEGF-B has two isoforms, a 32 kDa single chain and a 21 kDa single chain form (6, 7). The long form (VEGF-B₁₈₆) is 207 amino acids (aa) in length, with a 21 aa signal sequence and a 186 aa mature region. The short form (VEGF-B₁₆₇) is 188 aa in length, with a 21 aa signal sequence and a 167 aa mature segment. Each mature isoform shows the same N-terminal 94 aa that contains a cysteine knot VEGF homology domain (6 - 8). VEGF-B₁₈₆ is O-glycosylated; VEGF-B₁₆₇ is not. VEGF-B₁₆₇ binds heparin; VEGF-B₁₈₆ does not. Thus, VEGF-B₁₈₆ is secreted and freely diffusible in tissues (7). However, the VEGF-B₁₆₇ isoform is the predominant form in tissue (9). Mouse VEGF-B₁₈₆ is 93% and 87% aa identical to bovine and human VEGF-B₁₈₆, respectively; mouse VEGF-B₁₆₇ is 90% and 88% aa identical to bovine and human VEGF-B₁₆₇, respectively. The mouse VEGF-B₁₆₇ homodimer is 42 kDa in size, while the VEGF-B₁₈₆ homodimer is 62 kDa in size. Unlike VEGF₁₆₇, VEGF-B₁₈₆ undergoes proteolytic processing that creates a partially processed 48 kDa homodimer and a fully processed 32 kDa homodimer. Processing appears to occur at Arg127 of the mature form (10). Both forms of VEGF-B can heterodimerize with VEGF (7). Both VEGF-B isoforms bind to VEGF receptor 1 (VEGF R1), but not VEGF R2 or VEGF R3 (11). VEGF-B₁₆₇ also binds neuropilin-1, but only the 127 aa processed form of VEGF-B₁₈₆ binds neuropilin-1 (10). As a dimer, full length VEGF-B₁₈₆ does not interact with neuropilin-1, while any dimer that contains the processed VEGF-B₁₂₇ subunit will interact with neuropilin-1 (10). The importance of differential neuropilin binding is unclear. VEGF-B deficient mice display an atrial conduction deficit (12). On endothelial cells, ligation of VEGF R1 by VEGF-B has been shown to regulate the expression and activity of urokinase type plasminogen activator and plasminogen activator inhibitor 1 (11).

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