

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse VEGF-B ₁₈₆ in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 25% cross-reactivity with recombinant human (rh) VEGF-B ₁₈₆ is observed and no cross-reactivity with rhVEGF
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse VEGF-B ₁₈₆
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 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.
Immunohistochemistry	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. Two isoforms of mouse VEGF-B are produced by alternative splicing (6, 7). The long form (VEGF₁₈₆) is 207 amino acids (aa) in length, with a putative 21 aa signal sequence and a 186 aa (32 kDa) mature region. The short form (VEGF₁₆₇) is 188 aa in length, with a 21 aa signal sequence and a 167 aa (21 kDa) mature segment. The two isoforms share the same N-terminal 94 aa residue containing the cysteine knot VEGF homology domain (6-8). VEGF₁₈₆ is O-glycosylated; VEGF₁₆₇ is not. VEGF₁₆₇ binds heparin; VEGF₁₈₆ does not. Thus, VEGF₁₈₆ is secreted and freely diffusible in tissues (7). However, the VEGF-B₁₆₇ isoform is the predominant form in tissue (9). Mouse VEGF-B₁₈₆ shares 93% and 87% aa identity with bovine and human VEGF-B₁₈₆, respectively. Mouse VEGF-B₁₆₇ also shares 90% and 88% aa identity with bovine and human VEGF-B₁₆₇, respectively. Unlike VEGF₁₆₇, VEGF-B₁₈₆ can undergo proteolytic processing to generate a partially processed 48 kDa heterodimer (16 kDa and 32 kDa) and a fully processed 32 kDa homodimer (two 16 kDa). Processing appears to occur at Arg 127 of the mature protein (10). VEGF-B can heterodimerize with VEGF (7). Both VEGF-B isoforms can 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, the 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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