

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 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 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 PIGF(-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).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.