

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human VEGF-B ₁₆₇ and human VEGF-B ₁₈₆ in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant mouse (rm) VEGF-B ₁₈₆ , rmVEGF-B ₁₆₇ , rmVEGF-B ₂₀₆ , recombinant human (rh) VEGF-A, rhVEGF-C, and rhVEGF-D is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human VEGF-B ₁₈₆
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	0.1 µg/mL	Recombinant Human VEGF-B ₁₆₇ (Catalog # 751-VE) and Recombinant Human VEGF-B ₁₈₆

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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 B (VEGF-B), also known as vascular endothelial growth factor-related factor (VRF), is a member of the VEGF family of growth factors that share structural and functional similarity (1, 2). Five mammalian members, including VEGF-A, -B, -C, -D and PlGF, have been identified. VEGF family members are disulfide-linked dimeric proteins that are important regulators of physiological and pathological vasculogenesis, angiogenesis and lymphangiogenesis. VEGF-B is expressed in most tissues, especially in heart, skeletal muscle and pancreas. In many tissues, VEGF-B is co-expressed and can heterodimerize with VEGF (3). By alternative splicing, two isoforms of mature VEGF-B containing 167 or 186 amino acid (aa) residues exist (3, 4). The two VEGF-B isoforms have identical amino-terminal cysteine-knot VEGF homology domains but the carboxyl end of VEGF-B₁₆₇ differs from that of VEGF-B₁₈₆ by the presence of a highly basic cysteine-rich heparin binding domain. Whereas VEGF-B₁₈₆ is a secreted diffusible protein, VEGF-B₁₆₇ is sequestered into the cell matrix after secretion. Both VEGF-B isoforms bind VEGF receptor 1 (VEGF R1), but not VEGF R2 or VEGF R3 (5). 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. VEGF-B₁₆₇ and a proteolytically processed form of VEGF-B₁₈₆ (VEGF-B₁₂₇) also bind neuropilin-1 (NP-1), a type I transmembrane receptor for semaphorins/collapsins, ligands involved in neuron guidance (6). Besides VEGF-B, NP-1 has been shown to bind PLGF-2, VEGF₁₆₅ and VEGF R1 (6, 7). The many interactions of NP-1 with VEGF ligands and receptor suggests that NP-1 may function as a regulator of angiogenesis (7).

References:

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4. Grimmond, S. *et al.* (1996) *Genome Res.* **6**:124.
5. Olofsson, B. *et al.* (1998) *Proc. Nat. Acad. Sci. USA* **95**:11709.
6. Makinen, T. *et al.* (1999) *J. Biol. Chem.* **274**:21217.
7. Fuh, G. *et al.* (2000) *J. Biol. Chem.* **275**:26690.