

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human VEGF-B <sub>186</sub> in direct ELISAs and Western blots. In these formats, this antibody shows 30% cross-reactivity with rmVEGF-B <sub>186</sub> and less than 1% cross-reactivity with rhVEGF-B <sub>167</sub> , rhVEGF-D, and rmVEGF-D.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human VEGF-B <sub>186</sub> Accession # P49765
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	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
<b>Western Blot</b>	0.1 µg/mL	Recombinant Human VEGF-B <sub>186</sub>

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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-B<sub>167</sub> differs from that of VEGF-B<sub>186</sub> by the presence of a highly basic cysteine-rich heparin binding domain. Whereas VEGF-B<sub>186</sub> is a secreted diffusible protein, VEGF-B<sub>167</sub> 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-B<sub>167</sub> and a proteolytically processed form of VEGF-B<sub>186</sub> (VEGF-B<sub>127</sub>) 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, VEGF<sub>165</sub> 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:

1. Li, X. and U. Eriksson (2001) *Int. J. Biochem Cell Biol.* **33**:421.
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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.