

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse VEGF-B <sub>167</sub> and mouse VEGF-B <sub>186</sub> in direct ELISAs and Western blots. In direct ELISAs, approximately 40% cross-reactivity with rhVEGF-B <sub>186</sub> is observed, 15% cross-reactivity with rhVEGF-B <sub>167</sub> is observed and less than 1% cross-reactivity with rmVEGF <sub>164</sub> , rhVEGF-C and rmVEGF-D is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse VEGF-B <sub>186</sub> Pro22-Ala107 Accession # P49766
<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 Mouse VEGF-B <sub>167</sub> (Catalog # 2595-VE) Recombinant Mouse VEGF-B <sub>186</sub> (Catalog # 767-VE)
<b>Blockade of Receptor-ligand Interaction</b>	In a functional ELISA, 0.04-0.1 µg/mL of this antibody will block 50% of the binding of 5 ng/mL of Recombinant Mouse VEGF-B <sub>186</sub> (Catalog # 767-VE) to immobilized Recombinant Human VEGF R1/Fit-1 Fc Chimera (Catalog # 321-FL) coated at 4 µg/mL (100 µL/well). This antibody can also block the binding of Recombinant Mouse VEGF-B <sub>167</sub> (Catalog # 2595-VE) to immobilized Neuropilin-1 Fc Chimera.	

## 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>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <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 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-B<sub>186</sub>) is 207 amino acids (aa) in length, with a 21 aa signal sequence and a 186 aa mature region. The short form (VEGF-B<sub>167</sub>) 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-B<sub>186</sub> is O-glycosylated; VEGF-B<sub>167</sub> is not. VEGF-B<sub>167</sub> binds heparin; VEGF-B<sub>186</sub> does not. Thus, VEGF-B<sub>186</sub> is secreted and freely diffusible in tissues (7). However, the VEGF-B<sub>167</sub> isoform is the predominant form in tissue (9). Mouse VEGF-B<sub>186</sub> is 93% and 87% aa identical to bovine and human VEGF-B<sub>186</sub>, respectively; mouse VEGF-B<sub>167</sub> is 90% and 88% aa identical to bovine and human VEGF-B<sub>167</sub>, respectively. The mouse VEGF-B<sub>167</sub> homodimer is 42 kDa in size, while the VEGF-B<sub>186</sub> homodimer is 62 kDa in size. Unlike VEGF<sub>167</sub>, VEGF-B<sub>186</sub> 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-B<sub>167</sub> also binds neuropilin-1, but only the 127 aa processed form of VEGF-B<sub>186</sub> binds neuropilin-1 (10). As a dimer, full length VEGF-B<sub>186</sub> does not interact with neuropilin-1, while any dimer that contains the processed VEGF-B<sub>127</sub> 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).

## References:

1. Li, X. and U. Eriksson (2001) *Int. J. Biochem Cell Biol.* **33**:421.
2. Olofsson, B. *et al.* (1999) *Curr. Opin. Biotechnol.* **10**:528.
3. Clauss, M. (2000) *Semin. Thromb. Hemost.* **26**:561.
4. Matsumoto, T. and L. Claesson-Welsh (2001) *Sci STKE Dec.* **11**(112):RE21.
5. DiPalma, T. *et al.* (1996) *Mamm. Genome* **7**:6.
6. Olofsson, B. *et al.* (1996) *Proc. Natl. Acad. Sci. USA* **93**:2576.
7. Olofsson, B. *et al.* (1996) *J. Biol. Chem.* **271**:19310.
8. Twonson, S. *et al.* (1996) *Biochem. Biophys. Res. Commun.* **220**:922.
9. Li, X. *et al.* (2001) *Growth Factors* **19**:49.
10. Makinen, T. *et al.* (1999) *J. Biol. Chem.* **274**:21217.
11. Olofsson, B. *et al.* (1998) *Proc. Nat. Acad. Sci. USA* **95**:11709.
12. Aase, K. *et al.* (2001) *Circulation* **104**:358.