

**DESCRIPTION**

<b>Source</b>	<i>E. coli</i> -derived human VEGF-B protein Pro22-Arg188 Accession # AAA91463
<b>N-terminal Sequence Analysis</b>	Pro22
<b>Structure / Form</b>	Disulfide-linked homodimer
<b>Predicted Molecular Mass</b>	19 kDa (monomer)

**SPECIFICATIONS**

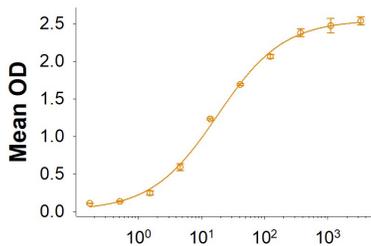
<b>SDS-PAGE</b>	19-22 kDa, under reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. When Recombinant Rat Neuropilin-1 Fc Chimera (Catalog # 566-N1) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human VEGF-B 167 (Catalog # 751-VEB) binds with an ED <sub>50</sub> of 10-80 ng/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in HCl with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 250 µg/mL in 4mM HCl.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**

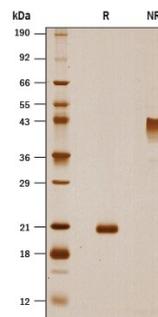
**Binding Activity**



Recombinant Human VEGF-B 167 (ng/mL)

When Recombinant Rat Neuropilin-1 Fc Chimera (Catalog # 566-N1) is immobilized at 1 µg/mL (100 µL/well) Recombinant VEGF-B 167 (Catalog # 751-VEB) binds with an ED<sub>50</sub> of 10-80 ng/mL.

**SDS-PAGE**



1 µg/lane of Recombinant Human VEGF-B 167 (Catalog # 751-VEB) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 19-22 kD and 40-45 kDa, respectively..

**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.