Human/Mouse VEGF-$B_{167/186}$ Antibody

Monoclonal Mouse IgG_1 Clone # 58013

Catalog Number: MAB751

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse VEGF-B in direct ELISAs and Western blots. Recognizes both the VEGF-B_{167} and VEGF-B_{186} isoforms. In Western blots, no cross-reactivity with recombinant human (rh) VEGF, rhVEGF-C, rhVEGF-D, rhCTGF, rhPlGF, rhLDGF, or rhPDGF is observed.
Source	Monoclonal Mouse IgG_1 Clone # 58013
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human VEGF-B_{167} Pro22-Arg188 Accession # AAB06274
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	1 µg/mL	Recombinant Human VEGF-B_{167} (Catalog # 751-VE) Recombinant Mouse VEGF-B_{167} (Catalog # 2595-VE) Recombinant Mouse VEGF-B_{186} (Catalog # 767-VE)
Immunohistochemistry	8-25 µg/mL	Immersion-fixed paraffin-embedded sections of human lung and breast

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 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) 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:

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. Olofsson, B. *et al.* (1996) Proc. Nat. Acad. Sci. USA **93**:2576.
4. Grimmond, S. *et al.* (1996) Benome 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.