Mouse VEGF-B_{186} Antibody

Monoclonal Rat IgG_{2B} Clone # 124112

Catalog Number: MAB767

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse VEGF-B_{186} in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) $VEGF_{165}$, rhVEGF-B_{186}, recombinant mouse (rm) VEGF-B_{167}, rhVEGF-C, rmVEGF-D, rhCTGF, rhPlGF, or rhLDGF is observed.
Source	Monoclonal Rat IgG_{2B} Clone # 124112
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant mouse VEGF-B_{186} Pro22-Ala207 Accession # P49766.2
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 Mouse VEGF-B_{186} (Catalog # 767-VE)

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 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. Two isoforms of mouse VEGF-B are produced by alternative splicing (6, 7). The long form ($VEGF_{186}$) is 207 amino acids (aa) in length, with a putative 21 aa signal sequence and a 186 aa (32 kDa) mature region. The short form ($VEGF_{167}$) is 188 aa in length, with a 21 aa signal sequence and a 167 aa (21 kDa) mature segment. The two isoforms share the same N-terminal 94 aa residue containing the cysteine knot VEGF homology domain (6-8). $VEGF_{186}$ is O-glycosylated; $VEGF_{167}$ is not. $VEGF_{167}$ binds heparin; $VEGF_{186}$ does not. Thus, $VEGF_{186}$ is secreted and freely diffusible in tissues (7). However, the VEGF-B_{167} isoform is the predominant form in tissue (9). Mouse VEGF-B_{186} shares 93% and 87% aa identity with bovine and human VEGF-B_{186}, respectively. Mouse VEGF-B_{167} also shares 90% and 88% aa identity with bovine and human VEGF-B_{167}, respectively. Unlike $VEGF_{167}$, VEGF-B_{186} can undergo proteolytic processing to generate a partially processed 48 kDa heterodimer (16 kDa and 32 kDa) and a fully processed 32 kDa homodimer (two 16 kDa). Processing appears to occur at Arg 127 of the mature protein (10). VEGF-B can heterodimerize with VEGF (7). Both VEGF-B isoforms can bind to VEGF receptor 1 (VEGF R1), but not VEGF R2 or VEGF R3 (11). VEGF-B167 also binds neuropilin-1, but only the 127 aa processed form of VEGF-B_{186} binds neuropilin-1 (10). As a dimer, the full length VEGF-B_{186} does not interact with neuropilin-1, while any dimer that contains the processed VEGF-B_{127} 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:

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