

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Mouse                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects mouse VEGF-B <sub>167</sub> in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant human (rh) VEGF-B <sub>167</sub> , recombinant mouse (rm) VEGF-B <sub>186</sub> , and rmVEGF-D is observed&n                  |
| <b>Source</b>             | Monoclonal Rat IgG <sub>2A</sub> Clone # 128313                                                                                                                                                                                                                             |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | <i>E. coli</i> -derived recombinant mouse VEGF-B <sub>167</sub><br>Pro22-Gly171<br>Accession # P49766-2                                                                                                                                                                     |
| <b>Conjugate</b>          | Alexa Fluor 750<br>Excitation Wavelength: 749 nm<br>Emission Wavelength: 775 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.

**Western Blot** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## 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 P/GF(-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).

## PRODUCT SPECIFIC NOTICES

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