

## Product Information

### ANTI-VASCULAR ENDOTHELIAL GROWTH FACTOR D (VEGF-D), MOUSE Developed in Goat, Affinity Isolated Antibody

Product Number **V6134**

#### Product Description

Anti-Mouse Vascular Endothelial Growth Factor D (VEGF-D) is developed in goat using a purified recombinant mouse vascular endothelial growth factor D expressed in *E. coli* as immunogen. Affinity isolated antigen specific antibody is obtained from goat anti-VEGF-D antiserum by immuno-specific purification which removes essentially all goat serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-Mouse Vascular Endothelial Growth Factor D recognizes recombinant mouse VEGF-D by various immunochemical techniques including immunoblotting and ELISA. In immunoblotting and ELISA, this antibody exhibits approximately 40 % cross-reactivity with recombinant human VEGF-D and less than 1 % cross-reactivity with recombinant mouse VEGF 115 and VEGF 120. Anti-mouse VEGF-D shows no cross-reactivity with recombinant human VEGF, recombinant human VEGF-B, and recombinant mouse VEGF 165. Mouse Vascular Endothelial Growth Factor D has an apparent molecular mass of approximately 20 kDa in SDS-PAGE.<sup>1</sup>

Vascular Endothelial Growth Factor D (VEGF-D), also known as *c-fos*-induced growth factor (FIGF), is a member of the VEGF family of growth factors. Vascular endothelial growth factors (VEGFs) are a family of closely related growth factors having a conserved pattern of eight cysteine residues and sharing common VEGF receptors. VEGFs stimulate endothelial cells, induce angiogenesis, promote cell migration, increase vascular permeability, and inhibit apoptosis. VEGF-D is most closely related to VEGF-C (23.3% amino acid sequence identity) and has a similar VEGF homology domain that spans the middle third of the precursor protein and the long N-terminal and C-terminal extensions.<sup>2</sup>

Human VEGF-D binds and activates VEGF R2 (KDR, Flk-1) and VEGF R3 (Flt-4), tyrosine kinase receptors expressed on vascular and lymphatic endothelial cells.

In contrast, mouse VEGF-D binds and cross-links only VEGF R3 and does not bind VEGF R2. Given that VEGF R2 signals for angiogenesis<sup>3,4</sup> and VEGF R3 signals for lymphangiogenesis,<sup>5</sup> it is suggested that VEGF-D induces both angiogenesis and lymphangiogenesis in humans but only lymphangiogenesis in the mouse.<sup>1</sup> Since VEGF R3 is strongly expressed in lymphatic endothelial cells, it is postulated that both human and mouse VEGF-D is involved in the regulation of the growth and/or differentiation of lymphatic endothelium and thus, a mitogen for endothelial cells.<sup>6</sup> In adults, VEGF-D is highly expressed in lung, heart, muscle, and small intestine. VEGF-D expression in fibroblasts is induced by cell interaction mediated by cadherin-11.<sup>7</sup> VEGF-D has special relevance in the vascularization of lung tissue during the last trimester of fetal development.<sup>2</sup>

#### Reagent

Anti-Mouse VEGF-D is supplied as 100 µg of antiserum lyophilized from a 0.2 µm filtered solution of phosphate buffered saline (PBS).

#### Preparation Instructions

To one vial of lyophilized powder, add 1 ml of sterile phosphate buffered saline (PBS) to produce a 0.1 mg/ml stock solution of antibody.

#### Storage/Stability

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2 °C to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing. Do not store in a frost-free freezer.

#### Product Profile

For immunoblotting, a working concentration of 0.1 to 0.2 µg/ml antibody is recommended. The detection limit for recombinant mouse VEGF-D is approximately 5 ng/lane under non-reducing and reducing conditions.

For ELISAs, a working concentration of 0.5 to 1.0 µg/ml antibody is recommended. The detection limit for recombinant mouse VEGF-D is approximately 0.16 ng/well.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

Endotoxin level is < 10 ng/mg antibody as determined by the LAL (Limulus ameobocyte lysate) method.

#### References

1. Baldwin, M.E., et al., J. Biol. Chem., Feb. 20 (2001).
2. Farnebo, F., et. al., Biochem. Biophys. Res. Commun., **257**, 891-894 (1999).
3. Shalaby, F., et al., Nature, **376**, 62-66 (1995).
4. Millauer, B., et al., Cancer Res., **56**, 1615-1620 (1996).
5. Taipale, J., et al., Curr. Top. Microbiol. Immunol., **237**, 85-96 (1999).
6. Achen, M.G., et al., Proc. Natl. Acad. Sci. USA, **95**, 548-553 (1998).
7. Orlandini, M., and Salvatore, O., J. Biol. Chem., **276**, 6576-6581 (2001).

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