

**DESCRIPTION**

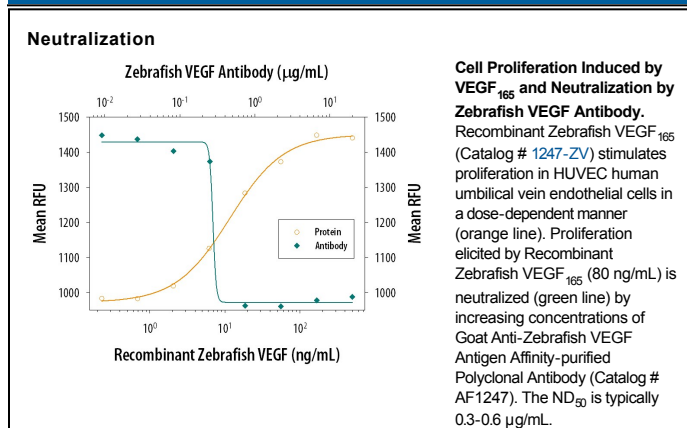
|                           |  |
|---------------------------|--|
| <b>Species Reactivity</b> | Zebrafish  |
| <b>Specificity</b>        | Detects zebrafish VEGF in direct ELISAs and Western blots. In Western blots, less than 2% cross-reactivity with recombinant human VEGF <sub>165</sub> , recombinant mouse VEGF <sub>164</sub> , and recombinant rat VEGF <sub>164</sub> (under non-reducing conditions) is observed. |
| <b>Source</b>             | Polyclonal Goat IgG  |
| <b>Purification</b>       | Antigen Affinity-purified  |
| <b>Immunogen</b>          | <i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant zebrafish VEGF <sub>165</sub><br>Ala24-Arg188<br>Accession # O73682  |
| <b>Endotoxin Level</b>    | <0.10 EU per 1 µg of the antibody by the LAL method.   |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*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.

|                       | <b>Recommended Concentration</b> | <b>Sample</b>  |
|-----------------------|----------------------------------|--|
| <b>Western Blot</b>   | 0.1 µg/mL                        | Recombinant Zebrafish VEGF <sub>165</sub> (Catalog # 1247-ZV)  |
| <b>Neutralization</b> |                                  | Measured by its ability to neutralize VEGF <sub>165</sub> -induced proliferation in HUVEC human umbilical vein endothelial cells. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.3-0.6 µg/mL in the presence of 80 ng/mL Recombinant Zebrafish VEGF <sub>165</sub> . |

**DATA**



**PREPARATION AND STORAGE**

|                                |  |
|--------------------------------|--|
| <b>Reconstitution</b>          | Reconstitute at 0.2 mg/mL in sterile PBS.  |
| <b>Shipping</b>                | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C   |
| <b>Stability &amp; Storage</b> | <b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

**BACKGROUND**

Vascular endothelial growth factor (VEGF), also known as vascular permeability factor (VPF) and VEGF-A, is a potent mediator of both angiogenesis and vasculogenesis in the fetus and adult. It is a member of the PDGF family that is characterized by the presence of eight conserved cysteine residues. In human, at least eight alternate splice isoforms of VEGF-A, ranging from 206 amino acids (aa) to 121 aa in length, are known. In zebrafish, two VEGF isoforms, a 165 aa and a 121 aa isoform, have been reported. Mature zebrafish VEGF<sub>165</sub> shares 64%, 62% and 62% aa sequence identity with frog, human, and mouse VEGF<sub>165</sub>, respectively. There are two tyrosine kinase receptors for VEGF reported in mammals termed VEGF R1 and VEGF R2/FLK-1. One receptor has been identified in zebrafish (FLK-1), and this may actually represent the orthologue to the early common ancestor for mammalian VEGF R1 and R2. All receptors are type I transmembrane proteins that show seven immunoglobulin-like domains extracellularly and a split kinase domain intracellularly. In addition to the tyrosine kinase receptors, neuropilin-1 (NRP-1) has been reported to be a coreceptor for VEGF binding. It is proposed that the presence of NRP-1 lowers the concentration of VEGF necessary for activation of VEGF R2. NRP-1 has been reported in both zebrafish and human. VEGF regulates multiple biological functions in endothelial cells, including cell proliferation, migration and survival. These functions of VEGF are mediated partly through the induction of nitric oxide and prostacyclin, as well as up-regulation of metalloproteinases. Together with other vascular-specific growth factors such as the Angiopoietins, VEGF have separate but complementary roles in angiogenesis and vasculogenesis (1-7).

**References:**

1. Laing, D. *et al.* (1998) *Biochem. Biophys. Acta* **1397**:14.
2. Laing, D. and R. Ge (1998) GenBank Accession # AAC14713.
3. Laio, W. *et al.* (1997) *Development* **124**:381.
4. Lee, P. *et al.* (2002) *Proc. Natl. Acad. Sci. USA* **99**:10470.
5. Thurston, G. (2002) *J. Anat.* **200**:575.
6. Zachary, I. and G. Glikli (2001) *Cardiovasc. Res.* **49**:568.
7. Robinson, C.J. and S.E. Stringer (2001) *J. Cell. Sci.* **114**:853.