Zebrafish VEGF Antibody

Monoclonal Mouse IgG_{2B} Clone # 211615

Catalog Number: MAB1247

DESCRIPTION

Species Reactivity	Zebrafish
Specificity	Detects zebrafish VEGF in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) $VEGF_{121, 165, 206}$, rhVEGF-B_{186}, rhVEGF-C, rhVEGF-D, recombinant mouse (rm) $VEGF_{115}$, $rmVEGF_{165}$, rmVEGF-B_{186}, rmVEGF-D, or recombinant rat $VEGF_{164}$ is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 211615
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant zebrafish $VEGF_{165}$ Ala24-Arg188 Accession # O73682.1
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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.

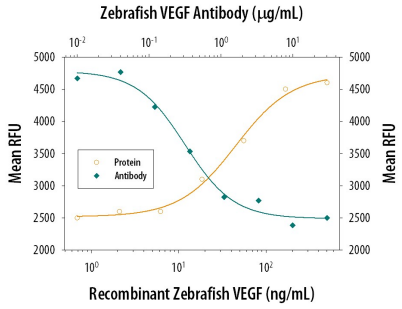
APPLICATIONS

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 Zebrafish $VEGF_{165}$ (Catalog # 1247-ZV)
Neutralization	Measured by its ability to neutralize $VEGF_{165}$-induced proliferation in HUVEC human umbilical vein endothelial cells. The Neutralization Dose (ND_{50}) is typically 0.2-0.5 µg/mL in the presence of 100 ng/mL Recombinant Zebraship $VEGF_{165}$.	

DATA

Neutralization



Cell Proliferation Induced by $VEGF_{165}$ and Neutralization by Zebrafish VEGF Antibody. Recombinant Zebrafish $VEGF_{165}$ (Catalog # 1247-ZV) stimulates proliferation in HUVEC human umbilical vein endothelial cells in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Zebrafish $VEGF_{165}$ (100 ng/mL) is neutrallized (green line) by increasing concentrations of Mouse Anti-Zebrafish VEGF Monoclonal Antibody (Catalog # MAB1247). The ND_{50} is typically 0.2-0.5 µg/mL.

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.

Zebrafish VEGF Antibody

Monoclonal Mouse IgG_{2B} Clone # 211615

Catalog Number: MAB1247

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 $VEGF_{165}$ shares 64%, 62% and 62% aa sequence identity with frog, human, and mouse $VEGF_{165}$, 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 upregulation 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. Gliki (2001) Cardiovasc. Res. **49**:568.
7. Robinson, C.J. and S.E. Stringer (2001) J. Cell. Sci. **114**:853.