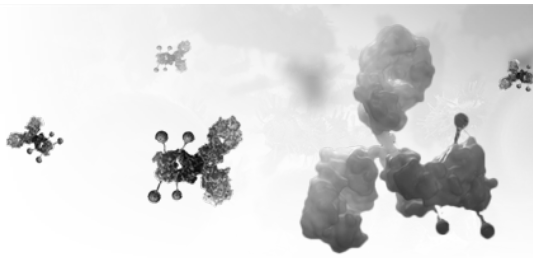

Zebrafish VEGF165 (aa 24 - 188) (DAG2591)

This product is for research use only and is not intended for diagnostic use.

PRODUCT INFORMATION

Product Overview	Recombinant Zebrafish VEGF 165 was expressed in Spodoptera frugiperda, Sf 21. Ala24-Arg188 (Accession # O73682.1)
Antigen Description	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 VEGF165 shares 64%, 62% and 62% aa sequence identity with frog, human, and mouse VEGF165, 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.
Species	Zebrafish
Purity	> 97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Conjugate	Unconjugated
Format	Lyophilized from a 0.2 μm filtered solution in Acetonitrile and TFA with BSA as a carrier protein

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Concentration	10 μg/mL
Buffer	PBS
Preservative	None
Storage	2-8°C short term, -20°C long term

BACKGROUND

Introduction	Vascular endothelial growth factor (VEGF) is a signal protein produced by cells that stimulates vasculogenesis and angiogenesis. It is part of the system that restores the oxygen supply to tissues when blood circulation is inadequate. Serum concentration of VEGF is high in bronchial asthma and low in diabetes mellitus. VEGF's normal function is to create new blood vessels during embryonic development, new blood vessels after injury, muscle following exercise, and new vessels (collateral circulation) to bypass blocked vessels. When VEGF is overexpressed, it can contribute to disease. Solid cancers cannot grow beyond a limited size without an adequate blood supply; cancers that can express VEGF are able to grow and metastasize. Overexpression of VEGF can cause vascular disease in the retina of the eye and other parts of the body. Drugs such as bevacizumab can inhibit VEGF and control or slow those diseases. VEGF is a sub-family of growth factors, to be specific, the platelet-derived growth factor family of cystine-knot growth factors.
Keywords	MGC70609; Vascular endothelial growth factor A; Vascular Endothelial Growth Factor; Vascular Permeability Factor; VEGF-A; VEGFA; VPF; MVCD1; VEGF; Zebrafish VEGF protein

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