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Recombinant Human VEGF-165 Protein

Catalog Number:	631001, 631002, 631003
Size:	20 µg, 100 µg, 500 ug
Target Name:	VEGFA165, VEGFA, MVCD1, VEGF, Vascular permeability factor (VPF)
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile 20mM Tris, 150mM NaCl, pH 8.0
Expression Host:	HEK293
Species:	Human
accession number:	P15692-4
Sources:	A DNA sequence encoding the human / cynomolgus VEGF165 isoform (P15692-4) (Met1-Arg191) was expressed. Human and Cynomolgus VEGF165 sequences are identical.
Molecular Weight:	The recombinant human / cynomolgus VEGF165 consists of 165 amino acids and predicts a molecular mass of 19.2 KDa. It migrates as an approximately 22 kDa and 24 kDa band in SDS-PAGE under reducing conditions.
Affinity Tag:	None
Purity:	≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin level:	
Protein Concentration:	Lyophilized
Storage and Handling:	Proteins are stable for up to twelve months from date of receipt at -20℃ to -80℃. Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

BACKGROUND INFORMATION

Human vascular endothelial growth factor 165 (VEGF-165) is a major pro-angiogenic isoform of VEGF-A that plays a central role in blood vessel formation, vascular permeability, and endothelial cell survival. It is particularly important in both physiological processes such as wound healing and embryonic vascular development, and in pathological angiogenesis associated with disease. VEGF-165 is the most abundant and biologically active splice variant of VEGF-A, distinguished by its intermediate size and strong heparin-binding capacity, which influences its distribution in extracellular matrices.

Structurally, VEGF-165 is a disulfide-linked homodimer composed of two identical subunits, each contributing to receptor binding and dimer stabilization. The protein contains distinct domains, including a receptor-binding domain and a heparin-binding domain encoded by the inclusion of exon 7 in its splice form. This structural feature enhances its interaction with extracellular matrix components and co-receptors. VEGF-165 primarily binds to VEGF receptor tyrosine kinases VEGFR-1 (FLT1) and VEGFR-2 (KDR),

with VEGFR-2 being the dominant mediator of angiogenic signaling. It can also interact with co-receptors such as neuropilins (NRP1/NRP2), which enhance signaling potency.

VEGF-165 does not have multiple classical ligands; rather, it functions as a ligand itself within the VEGF-A family isoforms. Dysregulation of VEGF-165 expression is strongly implicated in cancer, diabetic retinopathy, age-related macular degeneration, and other disorders characterized by abnormal vascular growth or permeability. Therapeutically, VEGF-165 is a major target of anti-angiogenic strategies, including monoclonal antibodies, receptor decoys, and small-molecule inhibitors. Conversely, controlled delivery of VEGF-165 has been investigated for promoting therapeutic angiogenesis in ischemic heart disease and peripheral vascular disease.

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