

PRODUCT INFORMATION



VEGFR3 Extracellular Domain (human, recombinant)

Item No. 33746

Overview and Properties

Synonyms: FLT4, Fms-like Tyrosine Kinase 4, Tyrosine-protein Kinase Receptor FLT4, Vascular Endothelial Growth Factor Receptor 3

Source: Active recombinant human C-terminal His-tagged VEGFR3 expressed in HEK293 Cells

Amino Acids: 25-776

Uniprot No.: P35916

Molecular Weight: 86 kDa

Storage: -80°C (as supplied)

Stability: ≥1 year

Purity: ≥97% estimated by SDS-PAGE

Supplied in: Lyophilized from sterile PBS, pH 7.4

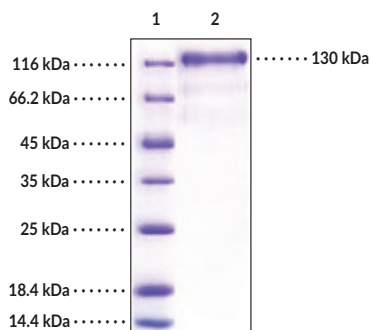
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay

Protein Concentration: *batch specific* mg/ml

Bioactivity: See figures for details

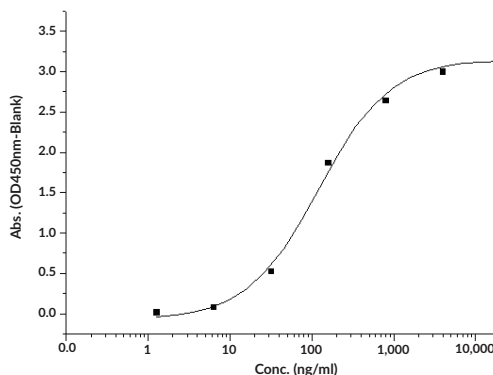
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: VEGFR3 Extracellular Domain

SDS-PAGE Analysis of VEGFR3 Extracellular Domain. This protein has a calculated molecular weight of 86 kDa. It has an apparent molecular weight of approximately 130 kDa by SDS-PAGE under reducing conditions due to glycosylation.



VEGFR3 Extracellular Domain binding in a binding assay. Immobilized human VEGF-C at 10 μg/ml (100 μl/well) can bind human VEGFR3-His. The EC₅₀ value of human VEGFR3-His is 0.011 μg/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

VEGFR3 is a receptor tyrosine kinase that is composed of an N-terminal extracellular ligand-binding domain, which contains seven immunoglobulin-like (Ig-like) domains, a transmembrane domain, and an intracellular tyrosine kinase domain, which is subject to phosphorylation and contains a kinase insert domain and the C-terminal domain.^{1,2} It contains an N-terminal signal peptide cleavage site at Tyr²⁵ and can also be cleaved between Arg⁴⁷² and Ser⁴⁷³ creating an alternate N-terminus.^{3,4} VEGFR3 forms homodimers or heterodimers with VEGFR2, with heterodimerization inducing changes in VEGFR3 autophosphorylation patterns.² It is expressed in lymphatic endothelial cells, where it is bound by the growth factors VEGF-C or VEGF-D and involved in cell proliferation, migration, and survival, as well as in cells undergoing angiogenesis or lymphangiogenesis, and in osteoblasts, neuronal progenitor cells, and macrophages.^{1,2} Inactivating mutations in VEGFR3 have been found in patients with hereditary lymphedema.^{5,6} Activation of VEGFR3 signaling increases tumor growth in a mouse orthotopic model of colorectal cancer, and VEGFR3 protein levels are increased in tumor tissue and tumor-associated macrophages isolated from patients with non-metastatic colorectal cancer.⁷ Cayman's VEGFR3 Extracellular Domain (human, recombinant) protein can be used for enzyme activity assays. This protein consists of 763 amino acids, has a calculated molecular weight of 86 kDa, and a predicted N-terminus of Tyr²⁵ after signal peptide cleavage. By SDS-PAGE, under non-reducing conditions, the apparent molecular mass of the protein is approximately 130 kDa due to glycosylation.

References

1. Park, S.A., Jeon, M.S., Ha, K.-T., *et al.* Structure and function of vascular endothelial growth factor and its receptor system. *BMB Rep.* **51(2)**, 73-78 (2018).
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7. Tacconi, C., Ungaro, F., Correale, C., *et al.* Activation of the VEGFC/VEGFR3 pathway induces tumor immune escape in colorectal cancer. *Cancer Res.* **79(16)**, 4196-4210 (2019).

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