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Certificate of Analysis and Data Sheet

Recombinant Human Vascular Endothelial Growth Factor receptor-1 D1-7

Catalog No.	**Source:**
228-10486	*Insect Cells.*

Synonyms

FLT-1, FLT1, Tyrosine-protein kinase receptor FLT, Flt-1, Tyrosine-protein kinase FRT, Fms-like tyrosine kinase 1, VEGFR-1.

Introduction

Endothelial cells express three different vascular endothelial growth factor (VEGF) receptors, belonging to the family of receptor tyrosine kinases (RTKs). They are named VEGFR-1 (Flt-1), VEGFR-2 (KDR/Flk-1), VEGFR-3 (Flt-4). Their expression is almost exclusively restricted to endothelial cells, but VEGFR-1 can also be found on monocytes, dendritic cells and on trophoblast cells. The flt-1 gene was first described in 1990. The receptor contains seven immunoglobulin-like extracellular domains, a single transmembrane region and an intracellular split tyrosine kinase domain. Compared to VEGFR-2 the Flt-1 receptor has a higher affinity for VEGF but a weaker signaling activity. VEGFR-1 thus leads not to proliferation of endothelial cells, but mediates signals for differentiation. Interestingly a naturally occurring soluble variant of VEGFR-1 (sVEGFR-1) was found in HUVE supernatants in 1996, which is generated by alternative splicing of the flt-1 mRNA. The biological functions of sVEGFR-1 still are not clear, but it seems to be an endogenous regulator of angiogenesis, binding VEGF with the same affinity as the full-length receptor.

Description

Soluble FLT1 Human Recombinant fused with the Fc part of human IgG1 produced in baculovirus is disulfide-linked homodimeric, glycosylated, polypeptide containing 751 amino acids and having a molecular mass of 130 kDa. The soluble receptor protein contains only the first 7 extracellular domains (Met1-Thr751), which contain all the information necessary for high affinity ligand binding. The FLT1 fc/Chimera is purified by proprietary chromatographic techniques.

Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

FLT1 D1-7 was lyophilized from a concentrated (1 mg/ml) sterile solution containing no additives.

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Solubility

It is recommended to reconstitute the lyophilized FLT1 Fc/Chimera in PBS not less than 50µg/ml, which can then be further diluted to other aqueous solutions.

Stability

Lyophilized FLT-1 although stable at room temperature for 3 weeks, should be stored desiccated below -18ºC. Upon reconstitution FLT1 should be stored at 4ºC between 2-7 days and for future use below -18ºC. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). **Please prevent freeze-thaw cycles.**

Amino Acid Sequence

MVSYWDTGVL LCALLSCLLL TGSSSGSKLK DPELSLKGTQ HIMQAGQTLH
LQCRGEAAHK WSLPEMVSKE SERLSITKSA CGRNGKQFCS TLTLNTAQAN
HTGFYSCKYL AVPTSKKKET ESAIYIFISD TGRPFVEMYS EIPEIIHMTE
GRELVIPCRV TSPNITVTLK KFPLDTLIPD GKRIIWDSRK GFIISNATYK
EIGLLTCEAT VNGHLYKTNY LTHRQTNTII DVQISTPRPV KLLRGHTLVL
NCTATTPLNT RVQMTWSYPD EKNKRASVRR RIDQSNSHAN IFYSVLTIDK
MQNKDKGLYT CRVRSGPSFK SVNTSVHIYD KAFITVKHRK QQVLETVAGK
RSYRLSMKVK AFPSPEVVWL KDGLPATEKS ARYLTRGYSL IIKDVTEEDA
GNYTILLSIK QSNVFKNLTA TLIVNVKPQI YEKAVSSFPD PALYPLGSRQ
ILTCTAYGIP QPTIKWFWHP CNHNHSEARC DFCSNNEESF ILDADSNMGN
RIESITQRMA IIEGKNKMAS TLVVADSRIS GIYICIASNK VGTVGRNISF
YITDVPNGFH VNLEKMPTEG EDLKLSCTVN KFLYRDVTWI LLRTVNNRTM
HYSISKQKMA ITKEHSITLN LTIMNVSLQD SGTYACRARN VYTGEEILQK
KEITIRDQEA PYLLRNLSDH TVAISSSTTL DCHANGVPEP QITWFKNNHK
IQQEPGIILG PGSSTLFIER VTEEDEGVYH CKATNQKGSV ESSAYLTVQG
TAASDKTHTC PPCPAPELLG GPSVFLFPPK PKDTLMISRT PEVTCVVVDV
SHEDPEVKFN WYVDGVEVHN AKTKPREEQY NSTYRVVSVL TVLHQDWLNG
KEYKCKVSNK ALPAPIEKTI S

Purity

Greater than 95.0% as determined by SDS-PAGE.

Biological Activity

The activity of FLT1/Fc was determined by its ability to inhibit the VEGF-dependent proliferation of human umbilical vein endothelial cells. The ED50 for this effect is typically 10-30 ng/ml, corresponding to a specific activity of 33,333.33-100,000 units/mg.