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# Certificate of Analysis and Data Sheet

# Recombinant Human Vascular Endothelial Growth Factor Receptor-1

| **Catalog No.** | **Source:** |
|---|---|
| 228-10481 | *Insect Cells.* |

## *Synonyms*

VEGFR-1, FLT-1, FLT1, Tyrosine-protein kinase receptor FLT, Flt-1, Tyrosine-protein kinase FRT, Fms-like tyrosine kinase 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 VEGFR1 Human Recombinant produced in baculovirus is monomeric, glycosylated, polypeptide containing 688 amino acids and having a molecular mass of 96 kDa. The soluble receptor protein contains only the first 6 extracellular domains, which contain all the information necessary for binding of VEGF.
The VEGFR1 is purified by proprietary chromatographic techniques.

## *Physical Appearance*

Sterile Filtered White lyophilized (freeze-dried) powder.

## *Formulation*

VEGFR1 was lyophilized from a concentrated (1 mg/ml) sterile solution containing 1x PBS.

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### *Solubility*

It is recommended to reconstitute the lyophilized VEGFR1 in sterile water not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

### *Stability*

Lyophilized VEGFR-1 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution VEGFR1 should be stored at 4°C between 2-7 days and for future use below -18°C.
For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).
**Please prevent freeze-thaw cycles.**

### *Purity*

Greater than 90.0% as determined by:
(a)Analysis by RP-HPLC.
(b)Analysis by SDS-PAGE.

### *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
KEITIRGEHC NKKAVFSRIS KFKSTRNDCT TQSNVKH.

### *Biological Activity*

The activity of VEGFR1 was determined by its ability to abolish the binding of iodinated VEGF to solid surfaces or cell surface receptors. The ED50 for this effect is typically 10 ng/ml, corresponding to a specific activity of 100,000IU/mg.