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Certificate of Analysis and Data Sheet

Recombinant Human Vascular Endothelial Growth Factor Receptor-1 D1-3

Catalog No.
228-10482

Source:
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 D1-3 Human Recombinant produced in baculovirus is monomeric, glycosylated, polypeptide containing 352 amino acids and having a molecular mass of 45 kDa. The soluble receptor protein contains only the first 3 extracellular domains, which contain all the information necessary for binding of VEGF.

The VEGFR1 is purified by proprietary chromatographic techniques.

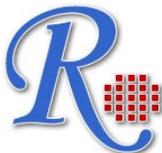
Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

VEGFR1 D1-3 was lyophilized from a concentrated (1mg/ml) sterile solution containing no additives.

**The products are furnished for LABORATORY RESEARCH USE ONLY.
Not for diagnostic or therapeutic use.**



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Solubility

It is recommended to reconstitute the lyophilized VEGFR1 D1-3 in sterile water not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Stability

Lyophilized VEGFR-1 D1-3 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution VEGFR1 D1-3 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.

Biological Activity

The activity of VEGFR1 D1-3 was determined by its ability to abolish the binding of iodinated VEGF to solid surfaces or cell surfaces receptors, and in Far-Western and cross-linking experiments with iodinated VEGF.

Amino Acid Sequence

Signal Peptide:

MVSYWDTGVLLCALLSCLLLTGSSSG.

Soluble sVEGFR.1(D3):

SKLKDPELSLKGTOHIMQAGQTLHLQCRGEEAAHKWVSLPEMVSKESEKLSITKS
ACGRNGKQFCSTLTLNNTAQANHTGFYSCKYLAVPTSKKTESAIYIFISDTGR
PFVEMYSEIPEIIHMTEGRELVIPCRVTSPNITVTLKKFPLDTLIPDGKRIIWDNRK
GFIIISNATYKEIGLLTCEATVNGHLYKTNLTHRQNTIIDVQISTPRPVKLLRG
HTLVLNCTATTPLNTRVQMTWSYPDEKNKRASVRRRIDQSNSHANIFYSVLTID
KMQNKDKGLYTCRVRSGPSFKSVNTSVHIYDKAFITVKH.

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