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Certificate of Analysis and Data Sheet

Recombinant Human Vascular Endothelial Growth Factor receptor-1 D1-5

Catalog No.
228-10485

Source:
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 VEGFR D1-5 Human Recombinant produced in baculovirus is monomeric, glycosylated, polypeptide containing 562 amino acids and having a molecular mass of 70 kDa. The soluble receptor protein contains only the first 5 extracellular domains, which contain all the information necessary for binding of VEGF.

The VEGFR1 is purified by proprietary chromatographic techniques.

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



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Physical Appearance

Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation

VEGFR1 D1-5 was lyophilized from a concentrated (1 mg/ml) sterile solution containing no additives.

Solubility

It is recommended to reconstitute the lyophilized VEGFR1 D5 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.

Biological Activity

The activity of VEGFR1 D5 was determined by its ability to abolish the binding of iodinated VEGF to solid surfaces or cell surfaces. The ED50 for this effect is typically 10 ng/ml, corresponding to a specific activity of 100,000IU/mg.

In a 13 day CAM-assay sVEGFR-1 is able to inhibit VEGF stimulated sprouting of capillaries at 30 pM.

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