



sVEGFR-1 (D1-6), human recombinant

Catalog No: 56130
Lot No: XXXXX
Source: Insect cells
Synonyms: Fms-like tyrosine kinase 1, Vascular permeability factor receptor

Background

Recombinant human soluble Vascular Endothelial Growth Factor Receptor-1 (sVEGFR-1) is the naturally occurring form and was cloned from total RNA of human umbilical vein endothelial cells. The recombinant mature sVEGFR-1 is a glycosylated monomeric protein with a mass of approximately 96 kDa. The soluble receptor protein consists of the first 6 extracellular domains (Met1-His688) containing the unique 31 amino acids residues at the C-terminus.

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), and 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 HUVEC 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

Human recombinant soluble VEGFR-1 (D1-6) produced in insect cells is a 96 kDa monomer containing 663 amino acids.

Formulation

Lyophilized.

Solubility

The lyophilized sVEGFR-1 (D1-6) is soluble in water and most aqueous buffers and should be reconstituted in PBS to a concentration not lower than 100 ng/ml.

Stability

Lyophilized samples are stable for greater than six months at -20°C to -70°C . Reconstituted sVEGFR-1 (D1-6) should be stored in working aliquots at -70°C . Avoid repeated freeze and thaw cycles!

Purity

>95% by SDS-PAGE & silver stain.



Amino Acid Sequence

SGSKLKDPEL SLKGTQHIMQ AGQTLHLQCR GEAAHKWSLP EMVSKESERL SITKSACGRN GKQFCSTLTL NTAQANHTGF
YCKYLAVPT SKKKETESAI YIFISDTGRP FVEMYSEIPE I IHMTEGELV IPCRVTSANI TVTLKKFPLD TLIPDGKRII
WDSRKGFIIS NATYKEIGLL TCEATVNGHL YKTNYLTHRQ TNTIIDVQIS TPRPVKLLRG HTLVLNCTAT TPLNTRVQMT
WSYPDEKNKR ASVRRIDQSN SHANIFYSVL TIDKMQNKDK GLYTCRVRSG PSFKSVNTSV HIYDKAFITV KHRKQQVLET
VAGKRSYRLS MKVKAFPSPE VVWLKDGLPA TEKSARYLTR GYSLI IKDVT EEDAGNYTIL LIKQSNVFNK LTATLIVNVK
PQIYEKAVSS FPDALYPLG SRQILTCTAY GIPQPTIKWF WHPCNHNHSE ARCDFCSNNE ESFILDADSN MGNRIESITQ
RMAIIEGKNK MASTLVVADS RISGIYICAS NKVGTVGRNI SFYITDVPNG FHVNLEKMPT EGEDLKLST VNKFLYRDVT
WILLRTVNNR TMHYSISKQK MAITKEHSIT LNLTIMNVSL QDSGTACRA RNVYTGEIIL QKKEITIRGE HCNKKVFSRI
SKFKSTRNDC TTQSNVKH

Activity

The activity of sVEGFR-1 (D1-6) was determined by its ability to inhibit the VEGF-A-induced proliferation of HUVECs.

Usage

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