

DA3534

Human VEGFR-1 / Flt-1 (Fc Chimera) - Purified

Alternate names:

FLT, FLT1, FRT, Fms-like tyrosine kinase 1, Tyrosine-protein kinase FRT, Tyrosine-protein kinase receptor FLT, VEGF Receptor 1, VEGFR1, Vascular endothelial growth factor receptor 1, Vascular permeability factor receptor

Quantity:

10 µg

Background:

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. All VEGF-receptors have seven immunoglobulin-like extracellular domains, a single transmembrane region and an intracellular split tyrosine kinase domain. VEGFR-2 has a lower affinity for VEGF than the Flt-1 receptor, but a higher signalling activity. Mitogenic activity in endothelial cells is mainly mediated by VEGFR-2 leading to their proliferation. Differential splicing of the flt-1 gene leads to the formation of a secreted, soluble variant of VEGFR-1 (sVEGFR-1). No naturally occurring, secreted forms of VEGFR-2 have so far been reported. The binding of VEGF165 to VEGFR-2 is dependent on heparin.

Uniprot ID:

[P17948](#)

NCBI:

[NP_001153392.1](#)

GeneID:

[2321](#)

Species:

Human

Source:

Insect cells

Format:

State: Lyophilized purified protein.

Purity: >90% by SDS-PAGE and visualised by silver stain.

Buffer System: PBS, pH 7.4 without stabilizers.

Endotoxin Level: < 0.1 ng per ug of sVEGFR-1

Reconstitution: Restore in water or medium to a concentration not lower than 50 µg/ml.

The lyophilised sVEGFR-1/Fc is soluble in water and most aqueous buffers.

Description:

Recombinant Human soluble Vascular Endothelial Growth Factor Receptor-1 (sVEGFR-1_{D1-7}) was fused with the Fc part of human IgG1. The recombinant mature sVEGFR-1D1-7/Fc is a disulfide-linked homodimeric protein. The sVEGFR-1_{D1-7}/Fc monomers have a mass of approximately 130 kDa. The soluble receptor protein consists of all 7 extracellular domains (Met1-Thr751), which contain all the information necessary for high affinity ligand binding.

AA Sequence:

SKLKDPELSLKGTHIMQAGQTLHLQCRGEAAHKWSLPEMVSKESERLSITKSACGRNGKQFCSTLTNTAQ
ANHTG
FYCKYLAVPTSKKKETESAIYIFISDTGRPFVEMYSEIPEIIHMTGRELVIPCRVTSPNITVTLLKKFPLD
TLIPD
GKRIIWDSRKGFIIISNATYKEIGLLTCEATVNGHLYKTNLYLTHRQTNTIIDVQISTPRPVKLLRGHTLVLC
TATTP

LNTRVQMTWSYPDEKNKRASVRRRIDQSNSHANIFYSVLTIDKMQNKDGLYTCRVRSGPSFKSVNTSVHIY
 DKAFI
 TVKHKRQQVLETVAGKRSYRLSMKVKAFFSPEVWLKDGLPATEKSARYLTRGYSLIHKDVTEEDAGNYTIL
 LSIKQ
 SNVFKNLTATLIVNVKQIYEKAVSSFPDPALYPLGSRQILTCTAYGIPQPTIKWFHPCNNHSEARCDFC
 SNNEE
 SFILDADSNMGNRIESITQRMAIIEGKNKMASTLVVADSRISGIYICIASNKVGTVGRNISFYITDVPNGFH
 VNLEK
 MPTEGEDLKLSTVNKFLYRDVTWILLRTVNNRTMHYSISKQKMAITKEHSITLNLTIMNVSLQDSGTYACR
 ARNVY
 TGEEILQKKEITIRDQEAPYLLRNLSDHVAISSSTTLTDCANGVPEPQITWFKNNHKIQQEPGIILGPGSS
 TLFIE
 RVTEDEGVYHCKATNQKGSVESSAYLTVQGTRSDKTHTCPPELGGPSVFLFPPKPKDTLMISRTPE
 VTCVV
 VDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYCKKVSNAKALPAPIEKT
 ISKAK
 GQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPMLDSDGSFFLYSKLTV
 DKSRW
 QQGNVFSCSVMEALHNNHYTQKSLSLSPGK

Biological Activity: The activity of sVEGFR-1/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.

Molecular weight: 130 kDa (Monomer)

Storage:

Store lyophilized at 2-8°C for 6 months or at -20°C long term.

After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term.

Avoid repeated freezing and thawing.

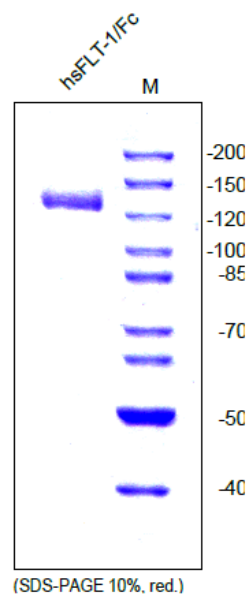
Shelf life: one year from despatch.

General Readings:

1. Barleon B, Totzke F, Herzog C, Blanke S, Kremmer E, Siemeister G, et al. Mapping of the sites for ligand binding and receptor dimerization at the extracellular domain of the vascular endothelial growth factor receptor FLT-1. J Biol Chem. 1997 Apr 18;272(16):10382-8. PubMed PMID: 9099677.
2. Roeckl W, Hecht D, Sztajer H, Waltenberger J, Yayon A, Weich HA. Differential binding characteristics and cellular inhibition by soluble VEGF receptors 1 and 2. Exp Cell Res. 1998 May 25;241(1):161-70. PubMed PMID: 9633524.

Pictures:

SDS-PAGE analysis of recombinant human soluble VEGFR-1/Fc produced in insect cells. Sample was loaded in 10% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.



Inhibition of the VEGF165-induced proliferation of HUVE cells by recombinant human endogenous sFlt-1 and sFlt-1 constructs. HUVECs were stimulated with 10 ng/ml VEGF165, the soluble receptors were added with a 100X excess.

