

DA3532X**Recombinant Human sVEGF Receptor 1 (Native)****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:

20 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, 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.

Uniprot ID:

[P17948](#)

NCBI:

[NP_001153392.1](#)

GeneID:

[2321](#)

Species:

Human

Source:

Insect cells

Format:

State: Lyophilized protein

Purity: >95% pure by SDS-PAGE and visualised by silver stain

Buffer System: PBS

Stabilizers: None

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

Reconstitution: Soluble in water and most aqueous buffers.

The lyophilized sVEGFR-1 should be restored in PBS to a concentration not lower than 0.1 ng/ml.

Description:

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.

Result by N-terminal sequencing: SKLKD

Length: 661 amino acids.

mRNA RefSeq: NM_0001159920

AA Sequence:

SKLKDPELSLKGTHIMQAGQTLHLQCRGEAAHKWSLPEMVSKESERLSITKSACGRNGKQFCSTLTNTAQ
 ANHTG
 FYSCYLA VPTSKKKETESAIIYIFISDTGRPFVEMYSEIPEIIHMTGRELVIPCRVTSPNITVTLLKKFPLD
 TLIPD
 GKRIIWD SRKGFIISNATYKEIGLLTCEATVNGHLYKTNLTHRQTNTIIDVQISTPRPVKLLRGHTLVLNC
 TATTP
 LNTRVQMTWSPDEKNKRASVRRRIDQSNSHANIFYSVLTIDKMQNKDKGLYTCRVSRGSPFSKSVNTSVHIY
 DKAFI
 TVKHRKQQLVETVAGKRSYRLSMKVKA FSPSEVWLKDGLPATEKSARYLTRGYSLLIKDVT EEDAGNYTIL
 LSIKQ
 SNVFKNLTATLIVNVKPQIYEKAVSSFPDPALYPLGSRQILTCTAYGIPQPTIKWFWHPCNHNHSEARCDFC
 SNNEE
 SFILDADSNMGNRIESITQRM AII EGKNKMASTLVVADSRISGIYICIASNKVGT VGRNISFYITDVPNGFH
 VNLEK
 MPTEGEDLKL SCTVNKFLYRDVTWILLRTVNNRTMHYSISKQKMAITKEHSITLNLTIMNVSLQDSGTYACR
 ARNVY
 TGEEILQKKEITIRGEHCNKKAVFSRISKFKSTRNDCTTQSNVKH

Biological Activity: The activity of sVEGFR-1 was determined by its ability to inhibit the VEGF-A-induced proliferation of HUVECs.

Molecular weight: 96 kDa (Monomer)

Storage:

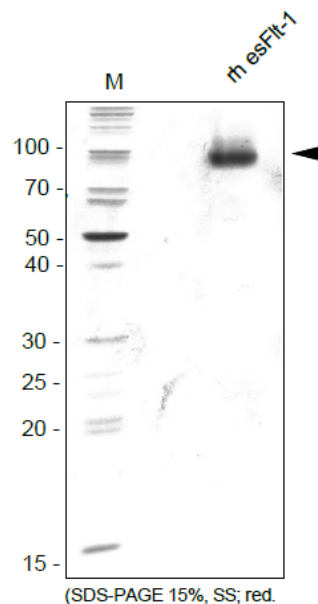
Store lyophilized at 2-8°C for 6 months or at -20°C long term.
 After reconstitution store the antibody undiluted at 2-8°C for one month
 or (in aliquots) at -20°C long term.
 Avoid repeated freezing and thawing.
 Shelf life: one year from despatch.

General Readings:

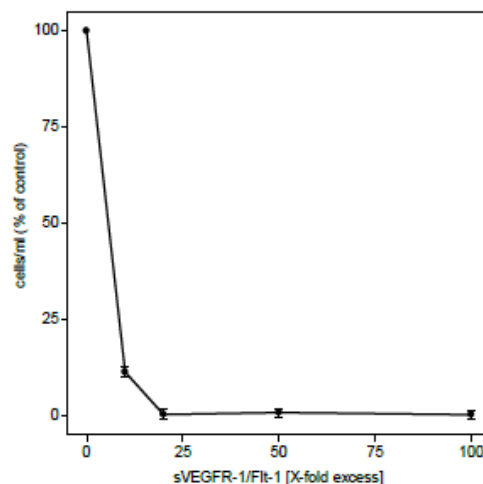
1. Röckl et al., Exp Cell Res 241:161, 1998
2. Barleon et al., J Biol Chem 272:10382, 1997

Pictures:

SDS-PAGE analysis of recombinant human soluble VEGFR-1 produced in insect cells. Sample was loaded in 15% SDS-polyacrylamide gel under reducing condition and stained with Silver stain.



Inhibition of the VEGF165-induced proliferation in HUVECs by soluble VEGFR-1/Flt-1. VEGF165 (10ng/ml) was preincubated with increasing amounts of sVEGFR-1/Flt-1 for 1h and then added to the cells.



Inhibition of VEGF165-induced proliferation of HUVECs by recombinant sVEGFR-1/Flt-1: Primary human umbilical vein endothelial (HUVE) cells were stimulated with 10ng/ml VEGF165 which was preincubated with an 100-fold excess of recombinant human soluble VEGFR-1/Flt-1 variants.

