

DA3541

Human VEGFR-1 / Flt-1 (D1-D3) - 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:

5 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), 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.

Uniprot ID:

[P17948](#)

NCBI:

[NP_001153392.1](#)

GeneID:

[2321](#)

Species:

Human

Source:

Insect cells

Format:

State: Lyophilized protein

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

Buffer System: PBS

Stabilizers: None

Endotoxin Level: < 0.1 ng per µg of VEGF.

Reconstitution: The lyophilized sVEGFR-1D1-3 is soluble in water and most aqueous buffers and should be restored in PBS to a concentration of 100 ng/ml.

Description:

Recombinant human soluble Vascular Endothelial Growth Factor Receptor-1 domain D1-3 (sVEGFR-1D1-3) is produced as a non-chimeric protein in a monomeric form. The soluble receptor protein contains only the first 3 extracellular domains, which contain all the information necessary for binding of VEGF. The receptor monomers have a mass of approximately 45 kDa containing 327 amino acid residues.

AA Sequence:

SKLKDPELSLKGTHIMQAGQTLHLQCRGEAAHKWSLPEMVSKESERLSITKSACGRNGKQFCSTLTNTAQ
ANHTG
FYCKYLAVPTSKKKETESAIYIFISDTGRPFVEMYSEIPEIIHMTGRELVIPCRVTSPNITVTLKKFPLD
TLIPD

GKRIIWDSRKGFIIISNATYKEIGLLTCEATVNGHLYKTNLYLTHRQTNTIIDVQISTPRPVKLLRGHTLVLC
TATTP
LNTRVQMTWSYPDEKNKRASVRRRIDQNSHANIFYSVLTIDKMQNKDGLYTCRVRSGPSFKSVNTSVHIY
DKAFI
TVKHRKQQVLETVAGKRSY

Biological Activity: The activity of sVEGFR-1 (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. Measured by its ability to inhibit the VEGF165-induced proliferation in human umbilical vein endothelial (HUVE) cells.

Specific Activity: 2.5 x 10e5 units/mg

Molecular weight: 45 kDa (Monomer)

Add. Information:

Centrifuge vials before opening!

Storage:

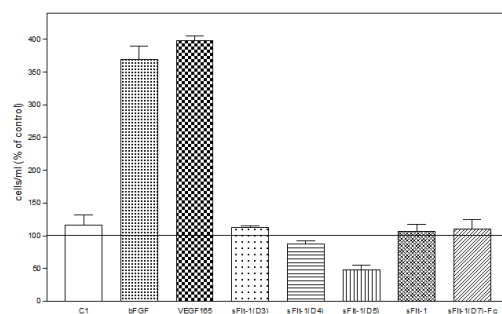
Store lyophilized at 2-8°C for 6 months or at -20°C long term.
After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Barleon et al., 1997, J Biol Chem 272:10382-8.
2. Röckl et al., 1998, Exp Cell Res, 241:161-170.

Pictures:

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.



SDS-PAGE analysis of recombinant human soluble VEGFR-1D1-3 produced in insect cells. Sample was loaded in 10% SDS-polyacrylamide gel under reducing condition and stained with Coomassie blue.

