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DA3539X Human VEGFR-1 / Flt-1 (D1-D5) - 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: 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 splited 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 occuring 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 purified protein
Purity: ›90% pure by SDS-PAGE and Silver stain
Buffer System: PBS
Stabilizers: None
Endotoxin Level: ‹ 0.1 ng per mg of VEGFR-1
Reconstitution: The lyophilized sVEGFR-1_{D1-5} is soluble in water and most aqueous buffers and should be restored in PBS to a concentration not lower than 100 ng/ml.

Description: Recombinat Human soluble Vascular Endothelial Growth Factor Receptor-1 domain D1-5 (sVEGFR-1_{D1-5}) is a 72 kDa protein containing amino acid residues. The baculovirus generated, recombinant Human sVEGFR-1 is produced as a non-chimeric protein in a monomeric form. The soluble receptor protein contains only the first 5 extracellular domains, which contain all the information necessary for high affinity ligand binding. The receptor monomers have a mass of approximately 70kDa.
Result by N-terminal sequencing: SGSKLKD
AA Sequence:
SKLKDPELSLKGTQHIMQAGQTLHLQCRGEAAHKWSLPEMVSKESERLSITKSACGRNGKQFCSTLTLNTAQ
ANHTG
FYSCKYLAVPTSKKKETESAIYIFISDTGRPFVEMYSEIPEIIHMTEGRELVIPCRVTSPNITVTLKKFPLD

TLIPD
GKRIIWDSRKGFIISNATYKEIGLLTCEATVNGHLYKTNYLTHRQTNTIIDVQISTPRPVKLLRGHTLVLNC
TATTP
LNTRVQMTWSYPDEKNKRASVRRRIDQSNSHANIFYSVLTIDKMQNKDKGLYTCRVRSGPSFKSVNTSVHIY
DKAFI
TVKHRKQQVLETVAGKRSYRLSMKVKAFPSPEVVWLKDGLPATEKSARYLTRGYSLIIKDVTEEDAGNYTIL
LSIKQ
SNVFKNLTATLIVNVKPQIYEKAVSSFPDPALYPLGSRQILTCTAYGIPQPTIKWFWHPCNHNHSEARCDFC
SNNEE
SFILDADSNMGNRIESITQRMAIIEGKNKMASTLVVADSRISGIYICIASNKVGTVGRNISFYITDVPNGFH
VN

Biological Activity: The activity of recombinant Human sVEGFR-1_{D1-5} was determined by its ability to to inhibit the VEGF-A-induced proliferation of HUVECs.
Molecular weight: 70 kDa (536 amino acids, Monomer)

Storage:

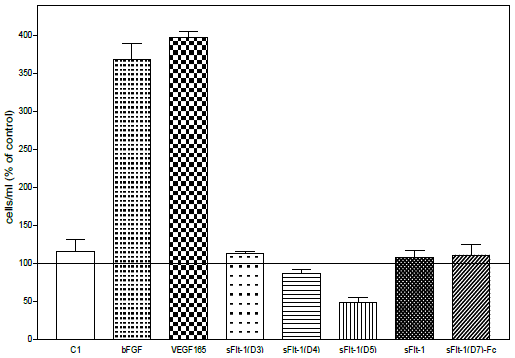
Store lyophilized at 2-8°C for 6 months or at -20°C long term.
After reconstitution store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C long term.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

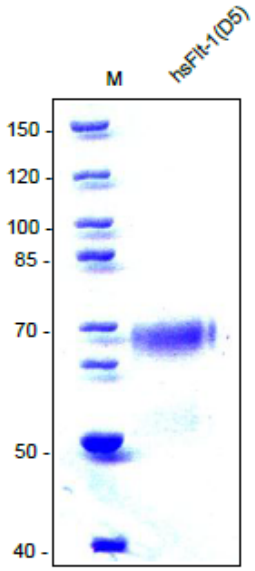
1. Röckl et al., Exp Cell Res 241:161-170.

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-1D1-5 produced in insect cells. Sample was loaded in 10% SDS-polyacrylamide gel under reducing condition and stained with Silver stain.



(SDS-PAGE 10%, red.)