

Soluble VEGFR-1 (D1-4), Recombinant Human

Catalog No: 56128

Lot No:

Source: Insect cells

Synonyms: Fms-like tyrosine kinase 1, Vascular permeability factor receptor.

Introduction :

Recombinant Human soluble Vascular Endothelial Growth Factor Receptor-1 domain D1-4 (sVEGFR-1D1-4) is produced as a nonchimeric protein in a monomeric form. The soluble receptor protein contains only the first 4 extracellular domains, which contain all the information necessary for binding of VEGF. The receptor monomers have a mass of approximately 55kDa containing 457 amino acid residues.

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.

Description:

Human recombinant Soluble VEGFR-1(D1-4) produced in insect cells is a 55 kDa monomer containing 457 amino acids.

Formulation:

Lyophilized.

Solubility:

The lyophilized sVEGFR-1(D1-4) is soluble in water and most aqueous buffers. The lyophilized sVEGFR-1(D1-4) should be reconstituted in PBS to a concentration not lower than 100ng/ml.

Stability:

Lyophilized samples are stable for greater than six months at -20°C to -70°C. Reconstituted sVEGFR-1(D1-4) should be stored in working aliquots at -20°C.

Avoid repeated freeze and thaw cycles!

Purity:

> 90% by SDS-PAGE & silver stain.

Amino acid sequence:

SKLKDPELSL KGTQHIMQAG QTLHLQCRGE AAHKWSPPEM VSKESERLSI TKSACGRNGK
QFCSTLTLNT AQANHTGFYS CKYLAVPTSK KKETESAIYI FISDTGRPFV EMYSEIPEII
HMTEGRELVI PCRVTSPNIT VTLKKFPLDT LIPDGKRIIW DSRKGFII SN ATYKEIGLLT
CEATVNGHLY KTNYLTHRQT NTIIDVQIST PRPVKLLRGH TLVLNCTATT PLNTRVQMTW
SYPDEKNKRA SVRRRIDQSN SHANIFYSVL TIDKMQNKDK GLYTCRVRSG PSFKSVNTSV
HIYDKAFITV KHRKQVLET VAGKRSYRLS MKVKAFPSPE VVWLKDGLPA TEKSARYLTR
GYSLIKDVT EEDAGNYTIL LSIKQSNVFK NLTATLIVNV KPQIYEKAVS SFPDPALYPL
GSRQILTCTA YGIPQPTIKW FWHPCNHNHS EARCDFC (457 amino acids).

Biological Activity:

The activity of sVEGFR-1(D1-4) was determined by its ability to inhibit the VEGF-A-induced proliferation of HUVECs in a range of 5 – 50 ng/ml.

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