Recombinant Human Fms-related Tyrosine Kinase 1, 5 Domains

Cat. No. FLT1-80H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human Soluble Fms-related Tyrosine Kinase 1 D1-5 produced in baculovirus is monomeric, glycosylated, polypeptide containing 562 amino acids and having a molecular mass of 70 kDa. The soluble receptor protein contains only the first 5 extracellular domains, which contain all the information necessary for binding of VEGF. The VEGFR1 is purified by proprietary chromatographic techniques.
Species	Human
Source	Insect Cells
Description	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 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 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

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

	VEGF with the same affinity as the full-length receptor..
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Purity	Greater than 90.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.
Formulation	VEGFR-1 D1-5 was lyophilized from a concentrated (1 mg/ml) sterile solution containing no additives.
Solubility	It is recommended to reconstitute the lyophilized sVEGFR-1 D5 in sterile water not less than 100µg/ml, which can then be further diluted to other aqueous solutions.
Biological Activity	The activity of VEGFR-1 D5 was determined by its ability to abolish the binding of iodinated VEGF to solid surfaces or cell surfaces. The ED50 for this effect is typically 10 ng/ml. In a 13 day CAM-assay sVEGFR-1 is able to inhibit VEGF stimulated sprouting of capillaries at 30 pM.
Storage	Lyophilized FLT-1 although stable at room temperature for 3 weeks, should be stored desiccated below -18℃. Upon reconstitution FLT1 should be stored at 4℃between 2-7 days and for future use below -18℃. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

GENE INFORMATION

Gene Name	FLT1 fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor) [Homo sapiens]
Synonyms	FLT1; fms-related tyrosine kinase 1 (vascular endothelial growth factor/vascular permeability factor receptor); FLT; VEGFR1; vascular endothelial growth factor receptor 1; EC 2.7.10.1; VEGFR-1; Vascular permeability factor receptor; Flt-1;

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	Tyrosine-protein kinase receptor FLT; Tyrosine-protein kinase FRT; Fms-like tyrosine kinase 1; FRT
Gene ID	2321
mRNA Refseq	NM_001159920
Protein Refseq	NP_001153392
MIM	165070
UniProt ID	P17948
Chromosome Location	13q12
Pathway	Cytokine-cytokine receptor interaction; Endocytosis; Focal adhesion; Signaling by VEGF
Function	ATP binding; growth factor binding; identical protein binding; nucleotide binding; receptor activity; transferase activity; vascular endothelial growth factor receptor activity

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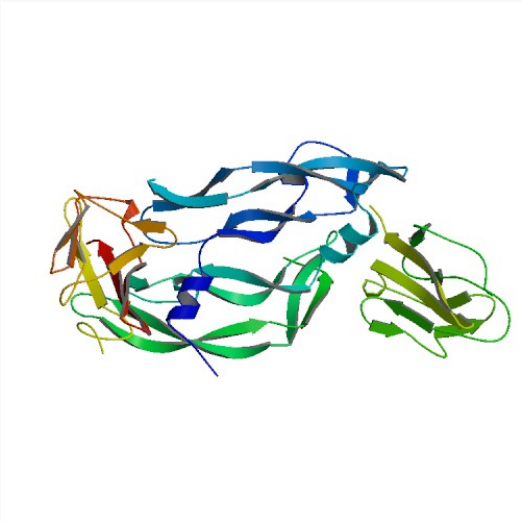
PDB rendering based on 1flt.	

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