

## FLT1 Protein, Human, Recombinant (aa 1-756, His)

### General Information

Synonyms:	FLT-1; VEGFR1; fms-related tyrosine kinase 1; VEGFR-1; FLT
Protein Construction:	A DNA sequence encoding the human VEGFR1 (P17948-1) extracellular domain (Met1-Asn756) was expressed fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 27
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P17948-1
Molecular Weight:	83.7 kDa (predicted); 110-120 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	Measured by its ability to inhibit the VEGF-dependent proliferation of human umbilical vein endothelial cells (HUVEC) (Conn, G. et al., 1990, Proc. Natl. Acad. Sci. USA 87:1323.). The ED50 for this effect is typically 10-40 ng/mL in the presence of 10 ng/mL human VEGF165.
Purity:	≥ 97 % as determined by SDS-PAGE. ≥ 90 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

Reconstitution:	A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.
Stability & Storage:	It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots. <small>Actual storage temperature shall be subject to the COA.</small>
Shipping:	In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Vascular endothelial growth factor receptor 1, also known as VEGFR-1, Fms-like tyrosine kinase 1, Tyrosine-protein kinase FRT, Tyrosine-protein kinase receptor FLT, Vascular permeability factor receptor and FLT1, is a single-pass type I membrane protein and secreted protein which belongs to the protein kinase superfamily, Tyr protein kinase

family and CSF-1/PDGF receptor subfamily. VEGFR-1 / FLT1 contains seven Ig-like C2-type (immunoglobulin-like) domains and one protein kinase domain. VEGFR-1 / FLT1 is expressed mostly in normal lung, but also in placenta, liver, kidney, heart and brain tissues. It is specifically expressed in most of the vascular endothelial cells, and also expressed in peripheral blood monocytes. VEGFR-1 / FLT1 is not expressed in tumor cell lines. VEGFR-1 / FLT1 is an essential receptor tyrosine kinase that regulates mammalian vascular development and embryogenesis. EGF-induced angiogenesis requires inverse regulation of VEGFR-1 and VEGFR-2 in tumor-associated endothelial cells. VEGFR-1 / FLT1 is a receptor for VEGF, VEGFB and PGF. It has a tyrosine-protein kinase activity. The VEGF-kinase ligand/receptor signaling system plays a key role in vascular development and regulation of vascular permeability. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

Shibuya M., et al., (1990), Nucleotide sequence and expression of a novel human receptor-type tyrosine kinase gene (flt) closely related to the fms family. *Oncogene* 5:519-524.

Kendall R.L., et al., (1993), Inhibition of vascular endothelial cell growth factor activity by an endogenously encoded soluble receptor. *Proc. Natl. Acad. Sci. U.S.A.* 90:10705-10709.

Herley M.T., et al., (1999), Characterization of the VEGF binding site on the Flt-1 receptor. *Biochem. Biophys. Res. Commun.* 262:731-738.

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