

## Recombinant Human Flt-3 Ligand/FLT3L

### Information

Accession #	P49771
Alternate Names	FL; FLG3L; Flt3 ligand; Flt-3 Ligand; Flt3L; FLT3LG; fms-related tyrosine kinase 3 ligand; SL cytokine
Source	Human embryonic kidney cell, HEK293-derived human Flt-3 Ligand/FLT3L protein
Protein sequence	Thr27-Ala185
M.Wt	18.0 kDa
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 3 years from date of receipt, -20 to -70 °C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Measured in a cell proliferation assay using BaF3 mouse pro-B cells transfected with mouse Flt-3. The EC50 for this effect is 0.2-1 pg/mL.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

### Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

### Description

Flt-3 Ligand (FLT3L) is an alpha-helical cytokine that promotes the differentiation of multiple hematopoietic cell lineages<sup>[1-3]</sup>. Mature human Flt-3 Ligand consists of a 158 amino acid (aa) extracellular domain (ECD) with a cytokine-like domain and a juxtamembrane tether region, a 21 aa transmembrane segment, and a 30 aa cytoplasmic tail<sup>[4-7]</sup>. Within the ECD, human Flt-3 Ligand shares 71% and 65% aa sequence identity with mouse and rat Flt-3 Ligand, respectively<sup>[4-6]</sup>. The human and mouse Flt-3 Ligand proteins show cross-species activity. Flt-3 Ligand is also structurally related to M-CSF and SCF. Flt-3 Ligand is widely expressed in various human and mouse tissues. It is expressed as a noncovalently-linked dimer by T cells and bone marrow and thymic fibroblasts<sup>[1, 8]</sup>. Each 36 kDa chain of the Flt-3 Ligand dimer carries approximately 12 kDa of N- and O-

linked carbohydrates [8]. Alternate splicing and proteolytic cleavage of the transmembrane form of the Flt-3 Ligand protein can generate a soluble 30 kDa fragment that includes the cytokine-like domain [4,8]. Alternate splicing of human Flt-3 Ligand also generates membrane-associated isoforms that contain either a truncated cytoplasmic tail or an 85 aa substitution following the cytokine-like domain in the ECD of the Flt-3 Ligand protein [4, 5, 8]. Both transmembrane and soluble forms of Flt-3 Ligand signal through the tyrosine kinase receptor Flt-3/Flk-2 [3, 4, 6, 7]. Flt-3 Ligand induces the expansion of monocytes and immature dendritic cells as well as early B cell lineage differentiation [2, 9]. Additionally, Flt-3 Ligand synergizes with IL-3, GM-CSF, and SCF to promote the mobilization and myeloid differentiation of hematopoietic stem cells [4-6]. Flt-3 Ligand also cooperates with IL-2, IL-6, IL-7, and IL-15 to induce NK cell development and with IL-3, IL-7, and IL-11 to induce terminal B cell maturation [1, 10].

## Reference

- [1]. Wodnar-Filipowicz, A. (2003) *News Physiol. Sci.* 18:247.
- [2]. Dong, J. et al. (2002) *Cancer Biol. Ther.* 1:486.
- [3]. Gilliland, D.G. and J.D. Griffin (2002) *Blood* 100:1532.
- [4]. Hannum, C. et al. (1994) *Nature* 368:643.
- [5]. Lyman, S.D. et al. (1994) *Blood* 83:2795.
- [6]. Lyman, S.D. et al. (1993) *Cell* 75:1157.
- [7]. Savvides, S.N. et al. (2000) *Nat. Struct. Biol.* 7:486.
- [8]. McClanahan, T. et al. (1996) *Blood* 88:3371.
- [9]. Diener, K.R. et al. (2008) *Exp. Hematol.* 36:51.
- [10]. Farag, S.S. and M.A. Caligiuri (2006) *Blood Rev.* 20:123.

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