



Product Information

FLT-3/FLK-2 LIGAND (FL)

Mouse, Recombinant
Expressed in mouse NSO cells

Product Number **F 9175**

Product Description

FIt-3/Flk-2 Ligand (FL) is produced from a DNA sequence encoding the extracellular domain of mouse FL (amino acid residues 1 to 188).¹ The 162 amino acid residue recombinant protein, generated after removal of the 26 amino acid residue signal peptide, has a predicted molecular mass of approximately 18 kDa. Due to heterogenous glycosylation, the recombinant protein migrates as multiple bands ranging from 18 to 32 kDa in SDS-PAGE. At the amino acid level, human and mouse FL are approximately 72 % identical and the two proteins exhibit cross-species activity.

The FIt-3 (*fms*-like tyrosine kinase-3)/Flk-2 (fetal liver kinase-2) ligand (FL), a hematopoietic cytokine, was cloned based on its ability to bind and activate *c-kit* and FIt-3 tyrosine kinase receptors.² FL plays a key role in hematopoiesis by stimulating proliferation and/or differentiation of various hematopoietic cell types *in vitro* as well as *in vivo*.^{3,4} Mouse FL, a type I transmembrane glycoprotein, can undergo proteolytic cleavage to generate a soluble form of the protein. Also, an alternatively spliced FL mRNA, encoding a soluble form of the mouse FL, has been identified. Both the transmembrane and soluble forms of FL are biologically active.

FL synergizes with other hematopoietic cytokines to stimulate the growth and differentiation of early hematopoietic progenitors. FL promotes growth of early B cell progenitor cells in combination with IL-7⁵ and induces adhesion of the precursor B cell line Baft3 to fibronectin by activating the fibronectin receptors VLA-4 and VLA-5 integrins.⁶

FIt-3/Flk-2 ligand is widely expressed in a variety of mouse tissues. Cells known to express FL include T cell lines¹, a thymic stromal cell line⁷, bone marrow fibroblasts⁸, and hematopoietic cells. FIt-3 receptor is expressed in a variety of tissues including placenta, gonads, and tissues of nervous and hematopoietic

origin. In the hematopoietic system, the expression of FIt-3/Flk-2 ligand and FIt-3 receptor is restricted to the population enriched for precursor/progenitor cells.⁹ The gene for FL has been mapped to chromosome 7 in mouse.

Reagent

Recombinant Mouse FIt-3/Flk-2 Ligand is supplied as approximately 5 µg of protein lyophilized from a 0.2 µm filtered solution in 35 % acetonitrile and 0.1 % TFA containing 0.25 mg of bovine serum albumin

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 10 µg/ml.

Storage/Stability

Store at -20 °C. Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

Recombinant Mouse FIt-3/Flk-2 Ligand is measured by its ability to stimulate the proliferation of a FIt-3 transfected pro-B cell line.

The ED₅₀ for this effect is typically 4 ng/ml to 8 ng/ml.

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50 % increase in cell growth in a cell based bioassay.

Purity: >97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/µg protein as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Lyman, S.D., et al., *Cell*, **75**, 1157-1167 (1993).
2. Lyman, S.D., and Williams, D.E., *Curr. Opin. Hematol.*, **2**, 177-181 (1995).
3. Rohrschneider, L.R., in *Guidebook to Cytokines and Their Receptors*, (Nicola, A., ed.), Oxford University Press, Oxford, UK, pp. 168-170 (1995).
4. Lyman, S.D., and Jacobsen, S.E., *Blood*, **91**, 1101-1134 (1998).
5. Ray, R.J., et al., *Eur. J. Immunol.*, **26**, 1504-1510 (1996).
6. Shibayama, J., et al., *Cell. Immunol.*, **187**, 27-33 (1998).
7. Hannum, C. et al., *Nature*, **368**, 643-648 (1994).
8. Lisovsky, M., et al., *Leukemia*, **10**, 1012-1018 (1996).
9. Small, D., et al., *Proc. Natl. Acad. Sci. USA*, **91**, 459-463 (1994).

KAA 04/01

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.