



Irvine**Scientific**[®]

RECOMBINANT HUMAN FLT-3 LIGAND



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RECOMBINANT HUMAN FLT-3 LIGAND

Catalog No. 95120

INTENDED USE

Recombinant Human FLT-3 Ligand is a carrier-free, animal component-free bioactive recombinant cytokine intended for use in cell culture applications. FMS-related tyrosine kinase 3 ligand (FLT-3 Ligand) is a hematopoietic, four helical bundle cytokine and a growth factor important for the proliferation of hematopoietic cells. FLT-3 Ligand acts principally to potentiate the stimulatory activities of other hematopoietic growth factors to stimulate the proliferation and differentiation of various blood cell progenitors (1).

PRODUCT DESCRIPTION

1. Synonyms

FLT3L, Fms-related tyrosine kinase 3 ligand

2. Accession Number

P49771

3. Background

FLT-3 Ligand is a member of the "potentiating" group of hematopoietic growth factors that stimulate the proliferation of hematopoietic cells. Other members of this family include stem cell factor (SCF) and colony stimulating factor 1 (CSF-1). FLT-3 Ligand has minimal proliferative activity on its own, but can synergize with a wide range of other colony stimulating factors and interleukins to stimulate proliferation. FLT-3 Ligand binds to, and transmits signals through, the receptor tyrosine kinase known as FMS-like tyrosine kinase-3 (FLT-3). FLT-3 Ligand exerts a marked stimulatory action on primitive hematopoietic progenitor cells and a unique expanding effect on putative stem cells. The distal proliferative/differentiative action of FLT-3 Ligand is largely restricted to granulomonocytic progenitors and monocytic precursors. FLT-3 Ligand does not affect the growth of erythroid-committed progenitors. Expression of the FLT-3 receptor is essentially restricted to early hematopoietic progenitor cells in a quiescent status and progenitors undergoing granulomonocytic differentiation, suggesting differential expression of the FLT-3 receptor underlies the selective stimulatory effect of FLT-3 Ligand. FLT-3 Ligand also plays an important role in lymphopoiesis. FLT-3 Ligand promotes long-term expansion and differentiation of human pro-B cells in the presence of IL-7 or in combination of IL-7 and IL-3. At least two cytokines have been identified to block FLT-3 Ligand-induced or potentiated hematopoietic activity: TNF- α and TGF- β (2-4). Human FLT-3 Ligand can stimulate the proliferation of cells expressing murine FLT-3 receptors. Recombinant Human FLT-3 Ligand is a non-glycosylated protein containing 155 amino acids, with a molecular weight of 17.6 kDa.

4. Specifications

Formulation

Recombinant Human FLT-3 Ligand is lyophilized with 10 mM Na₂PO₄, pH 7.5.

Protein Content and Purity

≥98% determined by HPLC, reducing and non-reducing SDS-PAGE, UV spectroscopy at 280 nm.

Bioactivity

ED₅₀ is determined by dose-dependent proliferation of OCI-AML5 cells. The ED₅₀ is typically less than 5 ng/mL.

Quality and Grade

Carrier-free. Animal component-free.

SHIPPING

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

STORAGE INSTRUCTIONS AND STABILITY

Upon receipt, store the lyophilized protein at -10°C in a manual defrost freezer for up to 12 months from the date of receipt. Unopened vials are stable for one year from the date of receipt when stored as recommended. Reconstituted material should be apportioned in working volumes and stored at or below -10°C in manual defrost freezer. Reconstituted material is stable for 4-6 weeks when stored at or below -10°C and for 3-12 months at -80°C. Stability can be increased by adding at least 0.1% carrier protein.

PRECAUTIONS AND WARNINGS

This product is for research or further manufacturing use only. It is not for use in diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

DIRECTIONS FOR USE

1. Reconstitution

Centrifuge vial before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile water at a concentration of 0.1 mg/mL, which can be further diluted into other aqueous solutions.

2. Optimum Concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

REFERENCES

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3. Hunte BE, Hudak S, Campbell D, Xu Y, Rennick D (1996). flk2/ flt3 ligand is a potent cofactor for the growth of primitive B cell progenitors. *J. Immunol.* 156(2): 489-496
4. Jacobsen SEW, Veiby OP, Myklebust J, Okkenhaug C, Lyman SD (1996). Ability of flt3 ligand to stimulate the in vitro growth of primitive murine hematopoietic progenitors is potently and directly inhibited by transforming growth factor- β and tumor-necrosis factor- α . *Blood* 87(12): 5016-50264.