Cytokines

Human Recombinant Flt3/Flk-2 Ligand

Fms-like tyrosine kinase 3/fetal liver kinase-2

Catalog #	78009.1	10 µg
	78009	100 µg
	78009.3	500 µg
	78009.2	1000 µg

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Product Description

Flt3/Flk-2 (Fms-like tyrosine kinase 3/fetal liver kinase-2) Ligand is a hematopoietic cytokine that plays an important role as a co-stimulatory factor in the proliferation, differentiation, and survival of hematopoietic stem and progenitor cells and in the development of the immune system (Hannum et al.). Flt3/Flk-2 Ligand, together with stem cell factor and thrombopoietin, is commonly used to promote expansion of primitive CD34+ hematopoietic cells in culture. In combination with myeloid cytokines such as GM-CSF, G-CSF, or M-CSF, it enhances the growth and numbers of clonogenic myeloid progenitor cells. In synergy with IL-3, IL-4, IL-7, IL-11, IL-12, IL-15, and GM-CSF and TNF-α, Flt3/Flk-2 Ligand regulates the development of lymphoid progenitor cells, including dendritic cell, B cell, T cell, and NK cell progenitors. In contrast, Flt3/Flk-2 Ligand has no significant effect on erythropoiesis or megakaryopoiesis (Drexler & Quentmeier; Wodnar-Filipowicz).

Flt3/Flk-2 Ligand exists as membrane-bound and soluble isoforms. Both isoforms are biologically active and signal through the class III tyrosine kinase receptor (Flt3/Flk-2, CD135; Drexler & Quentmeier). Flt3/Flk-2 Ligand is produced by a variety of cell types, including uncommitted and committed hematopoietic cells and stromal fibroblasts, whereas the Flt3/Flk-2 receptor is expressed on CD34+ hematopoietic stem and progenitor cells, leukemic cells, and in the brain, placenta, and testis (Drexler & Quentmeier; Hannum et al.).

Product Information

Alternative Names:	FL, FLT3L, Flt3-L, Flt3 Ligand, Fms-like tyrosine kinase 3 ligand
Accession Number:	P49771
Amino Acid Sequence:	MTQDCSFQHS PISSDFAVKI RELSDYLLQD YPVTVASNLQ DEELCGGLWR LVLAQRWMER LKTVAGSKMQ GLLERVNTEI HFVTKCAFQP PPSCLRFVQT NISRLLQETS EQLVALKPWI TRQNFSRCLE LQCQPDSSTL PPPWSPRPLE ATAPT
Predicted Molecular Mass:	17.6 kDa
Species:	Human
Cross Reactivity:	Mouse, Rat, Monkey
Formulation:	Lyophilized from a sterile-filtered solution containing sodium phosphate and sodium chloride, pH 7.5.
Source:	E. coli

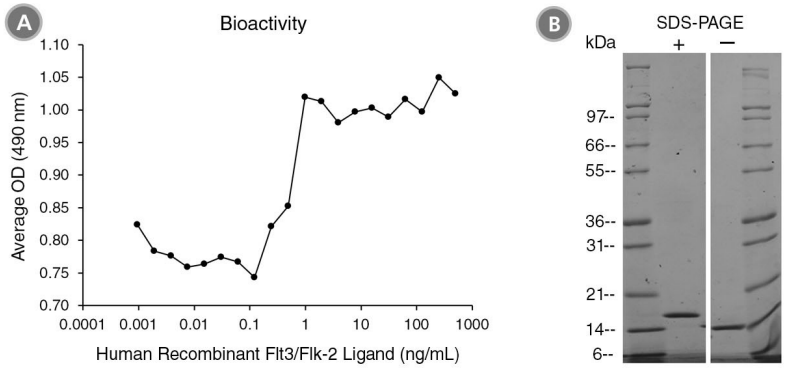
Specifications

Activity:	The specific activity is ≥ 1 x 10^5 units/mg (EC50 ≤ 10 ng/mL) as determined by a cell proliferation assay using OCI-AML5 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -20°C to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant Flt3/Flk-2 Ligand was tested by its ability to promote the proliferation of OCI-AML5 cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 0.498 ng/mL.
(B) 1 µg of Human Recombinant Flt3/Flk-2 Ligand was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant Flt3/Flk-2 Ligand has a predicted molecular mass of 17.6 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

Drexler HG & Quentmeier H. (2004) Mini Review FLT3: Receptor and Ligand. Growth Factors 22(2): 71–3.
Hannum C et al. (1994) Ligand for FLT3/FLK2 receptor tyrosine kinase regulates growth of haematopoietic stem cells and is encoded by variant RNAs. Nature 368(6472): 643–8.
Wodnar-Filipowicz A. (2003) Flt3 ligand: role in control of hematopoietic and immune functions of the bone marrow. News Physiol Sci 18: 247–51.