

Cytokines

Human Recombinant Flt3/Flk-2 Ligand, ACF

Fms-like tyrosine kinase 3/fetal liver kinase-2, animal component-free



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Catalog #	78137	10 µg
	78137.1	100 µg
	78137.2	1000 µg

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 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, Flt3/Flk-2 Ligand enhances the growth and numbers of clonogenic myeloid progenitor cells. In synergy with the interleukins 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 various 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; Rosnet et al.). Flt3/Flk-2 Ligand is produced by a variety of cell types, including uncommitted and committed hematopoietic cells and stromal fibroblasts, whereas expression of the Flt3/Flk-2 receptor is restricted to CD34+ hematopoietic stem and progenitor cells. Flt3/Flk-2 receptor is also expressed on leukemic cells and outside the hematopoietic system in the brain, placenta, and testis (Drexler & Quentmeier; Hannum et al.). This product is animal component-free.

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 LKTIVAGSKMQ GLLERVNTET HFVTKCAFQP PPSCLRFVQT NISRLQETS EQLVALKPWI TRQNFRCLE LQCQPDSTL PPPWSRPRL ATAPT
Predicted Molecular Mass:	17.6 kDa
Species:	Human
Cross Reactivity:	Mouse, Rat, Monkey
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid
Source:	E. coli

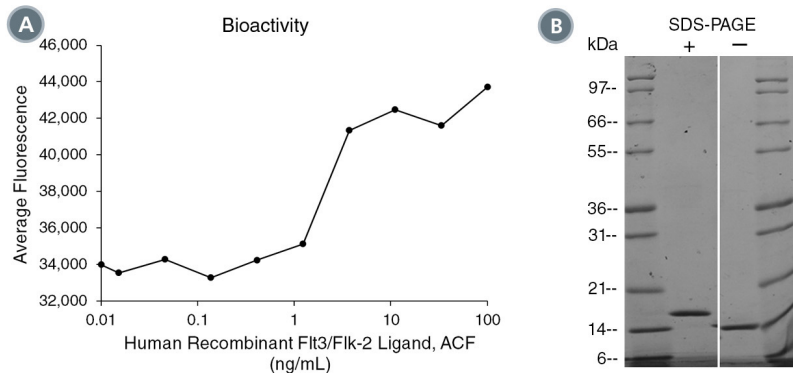
Specifications

Activity:	The specific activity is $\geq 1.0 \times 10^5$ units/mg ($EC_{50} \leq 10$ ng/mL) as determined by proliferation of OCI-AML5 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g 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. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately, BSA is not required.

Data



(A) The biological activity of Human Recombinant Flt3/Flk-2 Ligand, ACF was tested by its ability to promote the proliferation of OCI-AML5 cells. Cell proliferation was measured after 60 hours of culture using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the cytokine at which cell proliferation is at 50% of maximum. The EC₅₀ in the example above is 2.1 ng/mL.

(B) 1 µg of Human Recombinant Flt3/Flk-2 Ligand, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

Related Products

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

References

- Drexler HG & Quentmeier H. (2004) 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.
- Rosnet O et al. (1993) Human FLT3/FLK2 gene: cDNA cloning and expression in hematopoietic cells. *Blood* 82(4): 1110–19.
- Wodnar-Filipowicz A. (2003) Flt3 ligand: role in control of hematopoietic and immune functions of the bone marrow. *News Physiol Sci* 18: 247–51.

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