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Human Recombinant Flt3/Flk-2 Ligand (CHO-expressed)

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

Catalog #100-1710	50 µg
Catalog #100-1711	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 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: TQDCSFQHSP ISSDFAVKIR ELSDYLLQDY PVTVASNLQD EELCGGLWRL VLAQRWMERL KTVAGSKMQG LLERVNTEIH FVTKCAFQPP PSCLRFVQTN ISRLLQETSE QLVALKPWIT RQNFSRCLEL QCQPDSSTLP PPWSPRPLEA TAPTAPQPP

Predicted Molecular Mass: 18 kDa

Species: Human

Product Formulation: Lyophilized after dialysis against phosphate-buffered saline (PBS).

Source: CHO

Purity: ≥ 95%

Specifications

Activity: The specific activity is ≥ 1 x 10^6 units/mg (EC50 ≤ 1 ng/mL), as determined by a cell proliferation assay using human AML5 cells.

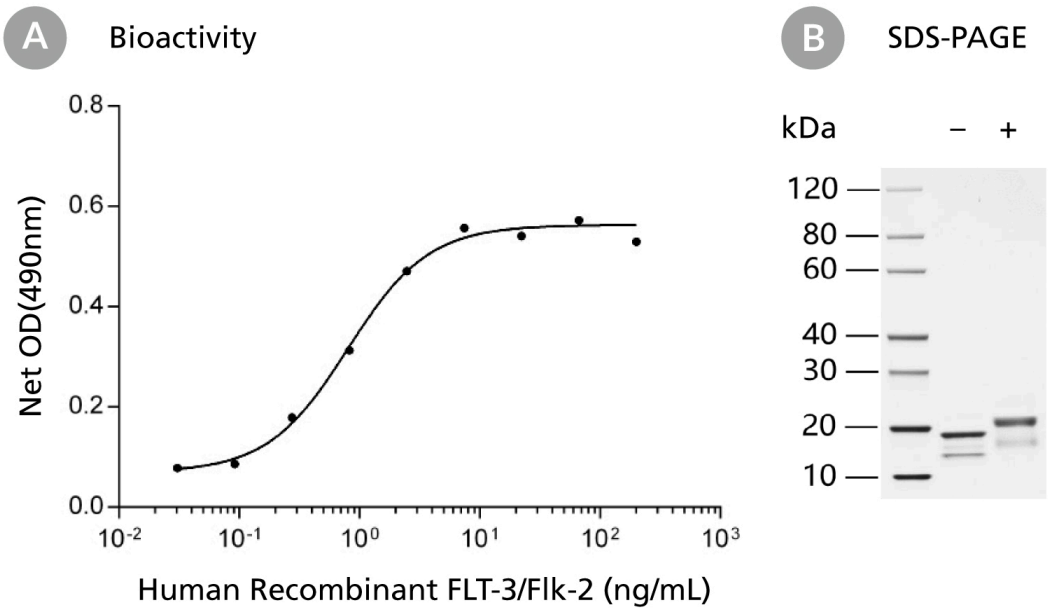
Endotoxin Level: Measured by gel clot Limulus amebocyte lysate (LAL) assay and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Stability and Storage: Store at -80°C. Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water or PBS to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.
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 week or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant Flt3/Flk-2 Ligand (CHO-expressed) was tested by its ability to promote the proliferation of human AML5 cells. 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 ≤ 1 ng/mL. (B) 2 µg of Human Recombinant Flt3/Flk-2 Ligand (CHO-expressed) was resolved with SDS-PAGE under non-reducing (-) and reducing (+) conditions. Human Recombinant Flt3/Flk-2 Ligand has a predicted molecular mass of 18 kDa.

Related Products

For a complete list of cytokines or peptide pools, 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) 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.