

Cytokines

Human Recombinant IL-11



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Interleukin 11

Catalog #	78025.1	10 µg
	78025	100 µg
	78025.2	1000 µg

Product Description

Interleukin 11 (IL-11) is a pleiotropic cytokine with effects on various tissues including the bone marrow, brain, and intestinal mucosa (Du & Williams). It belongs to the IL-6 family of cytokines that share a common signal transducer, gp130. IL-11 induces the proliferation of hematopoietic stem cells (Lemoli et al.) and megakaryocytic progenitor cells (Bruno et al.), the maturation of megakaryocytes (Burstein et al.), and the production of platelets (Neben et al.). IL-11 is produced by a variety of cell types including hematopoietic cells, mesenchymal cells, epithelial cells, and neuronal cells. It was first cloned from a cDNA library of the human bone marrow-derived stromal cell line KM-102 (Kawashima et al.). The binding of IL-11 to its receptor induces heterodimerization with the gp130 subunit and activation of JAK tyrosine kinases. IL-11 was the first pharmacologic agent approved for the treatment of chemotherapy-induced thrombocytopenia. IL-11 also plays a role in cancer progression by inducing the proliferation of epithelial cancer cells and the survival of metastatic cells at distant organs. Recently, IL-11 has gained interest for its role in the pathogenesis of diseases in dysregulated mucosal homeostasis associated with STAT3 upregulation, including gastrointestinal cancers (Putoczki et al.).

Product Information

Alternative Names:	Adipogenic inhibitory factor, AGIF, Interleukin-11, Oprelvekin
Accession Number:	P20809
Amino Acid Sequence:	MPGPPPGPPR VSPDPRAELD STVLLTRSLD ADTRQLAAQL RDKFPADGDH NLDSLPTLAM SAGALGALQL PGVLTRLRAD LLSYLRHVQW LRRAGGSSLK TLEPELGTLD ARLDRLRLRL QLLMSRLALP QPPPDPPAPP LAPPSSAWGG IRAAHAILGG LHLLTDWAVR GLLLLKTRL
Predicted Molecular Mass:	19.3 kDa
Species:	Human
Cross Reactivity:	Mouse, Monkey
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

Specifications

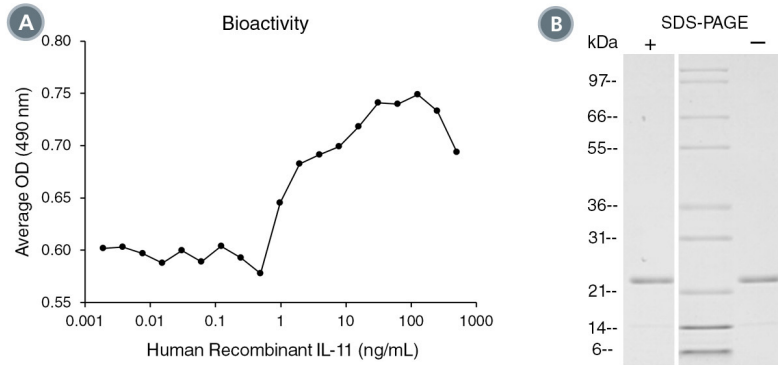
Activity:	The specific activity is $\geq 1.0 \times 10^5$ units/mg ($EC_{50} \leq 10$ ng/mL) as determined by a cell proliferation assay using TF-1 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

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 IL-11 was tested by its ability to promote the proliferation of TF-1 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 1.68 ng/mL.

(B) 1 µg of Human Recombinant IL-11 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-11 has a predicted molecular mass of 19.3 kDa but migrates to an apparent molecular mass of 23 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

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- Lemoli RM et al. (1993) Interleukin-11 stimulates the proliferation of human hematopoietic CD34+ and CD34+CD33-DR- cells and synergizes with stem cell factor, interleukin-3, and granulocyte-macrophage colony-stimulating factor. *Exp Hematol* 21(13): 1668–72.
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- Putoczki TL et al. (2013) Interleukin-11 is the dominant IL-6 family cytokine during gastrointestinal tumorigenesis and can be targeted therapeutically. *Cancer Cell* 24(2): 257–71.

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