Recombinant Mouse IL-11 (carrier-free)

Catalog# / Size	756102 / 10 µg 756104 / 25 µg
Regulatory Status	RUO
Other Names	Adipogenesis Inhibitory Factor (AGIF)
Description	IL-11, a member of IL6 family of cytokines, exerts a wide range of biological effects on various cell types including hematopoietic cells, hepatocytes, adipocytes, neurons, and osteoblasts. IL-11 works synergistically with other growth factors, which include SCF, IL-4, IL-3, IL-7, IL-12, IL-13, and GM-CSF to stimulate the proliferation of cells from several hematopoietic lineages. The binding of IL-11 to IL-11 receptor (IL-11R) induces membrane bound gp130 homodimerization and triggers STAT3 phosphorylation by JAK. IL-11 shares the common receptor subunit gp130 with IL-6, IL-27, LIF, OSM, CNTF, CT-1, CLC, and NP. Female mice deficient in the IL-11R revealed an important role for IL-11 in embryonic implantation. Additionally, IL-11 shows anti-inflammatory activity in models of inflammatory bowel disease, chemotherapy induced oral mucositis, and inflammatory arthritis. IL-11 and IL-13 are highly expressed in asthmatic airways (Th2 response), and IL-11 can inhibit Th1 responses and inhibits the production of Th1 cytokines such as IL-12 and shifts inflammation in the Th2 direction. Elevated IL-11 expression is associated with tumor grade and invasion in gastric cancer. Recombinant human IL-11 has been clinically approved to improve platelet recovery after chemotherapy-induced thrombocytopenia.

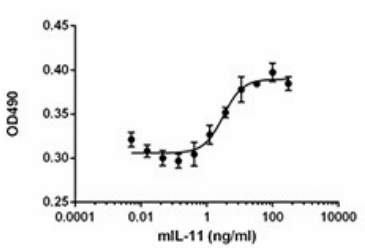
Product Details

Source	Mouse IL-11, 180 amino acids (Val20-Leu199) (Accession# P47873), was expressed in 293E cells.
Molecular Mass	The 180 amino acid recombinant protein has a predicted molecular mass of approximately 19.3 kD. The DTT-reduced and non-reduced protein migrates at approximately 19.3 kD by SDS-PAGE. The N-terminal amino acid is Valine.
Purity	>98%, as determined by Coomassie stained SDS-PAGE.
Formulation	Sterile-filtered with 0.2 µm filter, solution is comprised of 10 mM Sodium succinate, 4% mannitol, and in pH 5.0.
Endotoxin Level	Less than 0.1 ng per µg cytokine as determined by the LAL method.
Concentration	10 - 100 µg sizes are bottled at 200 µg/mL.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. **Avoid repeated freeze/thaw cycles.**
Activity	The ED_{50} = 4.0 - 12 ng/ml, corresponding to a specific activity of 0.83-2.5 x 10^5 units/mg, as determined by a dose-dependent stimulation of 7TD1 cells proliferation.
Application	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee. If you have any concerns, contact us at tech@biolegend.com.

Antigen Details

Structure	"Four-helix bundle" protein fold similar to IL-6.
Distribution	IL-11 can be secreted by various cell types that include epithelial, endothelial, keratinocytes, stromal, neuronal, fibroblasts, osteoclasts, and bone marrow stromal cells.
Function	IL-11 is a multifunctional cytokine that plays important roles in hemopoiesis, thrombopoiesis, megakaryocytopoiesis, and bone resorption. It regulates macrophage differentiation and confers mucosal protection after chemotherapy and radiation therapy. IL-11 expression can also be up-regulated by oncogenic Ras or respiratory virus infections. Also, IL-11 and IL-11Rα are induced by IL-13.
Interaction	Hematopoietic cells, hepatocytes, adipocytes, neurons, osteoblasts, fibroblasts, and gastrointestinal epithelial cells.
Ligand/Receptor	Membrane bound or soluble IL-11Rα heterodimerize with gp130.
Cell Type	Hematopoietic stem and progenitors
Biology Area	Cell Biology, Cell Motility/Cytoskeleton/Structure, Immunology, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	1. Putoczki T, Ernst M. 2010. *J. Leuko. Biol.* 6:1109-17. 2. Wilde MI, Faulds D. 1998. *BioDrugs* 10:159-71. 3. Barton VA. 2000. *J. Biol. Chem.* 2000. 275:36197-203. 4. Robb L, *et al.* 1998. *Nat. Med.* 4:303-8. 5. Lemoli RM, *et al.* 1995. *Br. J. Haematol.* 91:319-26. 6. Elias JA, *et al.* 1994. *J. Biol. Chem.* 269:22261-8. 7. Chen Q, *et al.* 2005. *J. Immunol.* 4:2305-13. 8. Howlett M, *et al.* 2012. *Gut* 10:1398-409. 9. Dams-Kozlowska H, *et al.* 2012. *BMC Biotechnology* 12:8.
Gene ID	16156

Product Data



Dose-dependent proliferation in 7TD1 cells.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587