

Recombinant Human IL-6 ACF

Catalog #	Product	Size
95121	Recombinant Human IL-6 ACF	95121-50 µg

Intended Use

This product is for research or further manufacturing use only. Not for injection or diagnostic procedures.

Product Description

Recombinant Human IL-6 is a carrier-free, animal component-free bioactive recombinant cytokine intended for use in cell culture applications. IL-6 is an interleukin that acts as both a pro-inflammatory and anti-inflammatory cytokine. It is secreted by T cells and macrophages to promote fever and stimulate immune response to trauma, especially burns or other tissue damage leading to inflammation. IL-6 is also a “myokine”, a cytokine produced from muscle, and is elevated in response to muscle contraction (1).

Synonyms: IFN-β2, B-cell Differentiation Factor, BSF-2, HSF, MGI-2

Accession Number: PO5231

Background: IL-6 is a pleiotropic cytokine with a wide range of biological activities in immune regulation, hematopoiesis, inflammation and oncogenesis. IL-6 signals through a cell-surface type I cytokine receptor complex consisting of the ligand-binding IL-6Rα chain (CD126), and the signal-transducing component gp130 (CD130). Signal transduction through gp130, the common signal transducer of cytokines related to IL-6, is mediated by the JAK–STAT pathway and the RAS–MAPK pathway. In addition to the membrane-bound receptor, a soluble form of IL-6R (sIL-6R) has been purified from human serum and urine. The sIL-6R/IL-6 complex can stimulate neurite outgrowth and promote survival of neurons, and hence may be important in nerve regeneration through remyelination. IL-6 is relevant to many disease processes such as diabetes, atherosclerosis, depression, Alzheimer’s disease, systemic lupus erythematosus, prostate cancer, and rheumatoid arthritis. There is an interest in developing anti-IL-6 agents as therapy against many of these diseases. Examples of such therapeutic agents include tocilizumab, which has been approved for rheumatoid arthritis and ALD518, described in clinical trials (2-5). Human IL-6 is active on mouse and rat cells. Recombinant human IL-6 is a non-glycosylated protein, containing 184 amino acids, with a molecular weight of 21000 Dalton.

Specifications

Formulation:	Recombinant Human IL-6 is lyophilized from 10 mM acetic acid (AcOH).
Protein Purity:	≥95% determined by reducing and non-reducing SDS-PAGE, UV spectroscopy at 280 nm.
Bioactivity:	ED ₅₀ is determined by the dose-dependent proliferation of mouse 7TD-1 cells. The ED ₅₀ is typically less than 1 ng/mL.
Quality and Grade:	Carrier-free and animal component-free.

Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis, which is available at www.irvinesci.com or upon request.

Shipping

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

Storage Instructions and Stability

Upon receipt, store the lyophilized protein at -10°C in a manual defrost freezer for up to 12 months from the date of receipt. Unopened vials are stable for one year from the date of receipt when stored as recommended. Reconstituted material should be apportioned in working volumes and stored at or below -10°C in manual defrost freezer.

Reconstituted material is stable for 4-6 weeks when stored at or below -10°C and for 3-12 months at -80°C. Stability can be increased by adding at least 0.1% carrier protein.

Directions for Use

1. Reconstitution

Centrifuge vial before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile 10mM HCL at a concentration of 0.1 mg/mL, which can be further diluted into other aqueous solutions.

2. Optimum Concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

Related Products

Catalog #	Product	Size
91211	PRIME-XV® Hematopoietic Cell Basal XSFM	500mL

References

1. van der Poll T, Keogh CV, Guirao X, Buurman WA, Kopf M, Lowry SF (1997). Interleukin-6 gene-deficient mice show impaired defense against pneumococcal pneumonia. *J. Infect. Dis.* 176(2): 439–444.
2. Kishimoto T (2010). IL-6: from its discovery to clinical applications. *Int. Immunol.* 22(5): 347-352.
3. Guo Y, Xu F, Lu T, Duan Z, Zhang Z (2012). Interleukin-6 signaling pathway in targeted therapy for cancer. *Cancer Treat. Rev.* 38(7): 904–910.
4. Mousa A, Bakhiet M (2013). Role of cytokine signaling during nervous system development. *Int. J. Mol. Sci.* 14(7): 13931-13957.
5. Jones SA, Scheller J, Rose-John S (2011). Therapeutic strategies for the clinical blockade of IL-6/gp130 signaling. *J. Clin. Invest.* 121(9): 3375–3383.

Technical

CONTACT US

For more information or assistance contact Customer Service at:

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WEBSITE RESOURCES

Visit the website at www.irvinesci.com for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature
- Complete list of offices and contact information by country

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