

# Human Interleukin-10 (hIL-10)

<input type="checkbox"/> SC 10 µg (With Carrier)	<input type="checkbox"/> SF 10 µg (Carrier Free)
<input type="checkbox"/> LC 50 µg (With Carrier)	<input type="checkbox"/> LF 50 µg (Carrier Free)

Multi-milligram quantities available

rev. 06/17/10



Cell Signaling  
TECHNOLOGY®

**Orders** ■ 877-616-CELL (2355)  
orders@cellsignal.com

**Support** ■ 877-678-TECH (8324)  
info@cellsignal.com

**Web** ■ www.cellsignal.com

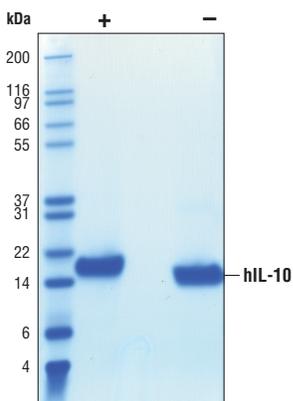
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

**Source:** Recombinant human IL-10 (hIL-10) Ser19-Asn178 (Accession # NM\_000572) was produced in *E. coli* at Cell Signaling Technology.

**Molecular Characterization:** Recombinant hIL-10 does not have a Met on the amino terminus and has a calculated MW of 18,647. DTT-reduced protein migrates as an 18 kDa polypeptide and non-reduced protein migrates as a 16 kDa polypeptide due to intramolecular cystines. The expected amino-terminal SPGQG of recombinant hIL-10 was verified by amino acid sequencing.

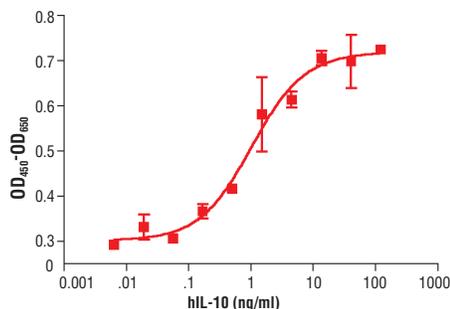
**Endotoxin:** Less than 0.01 ng endotoxin/1µg hIL-10.

**Purity:** > 98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hIL-10. All lots are greater than 98% pure.

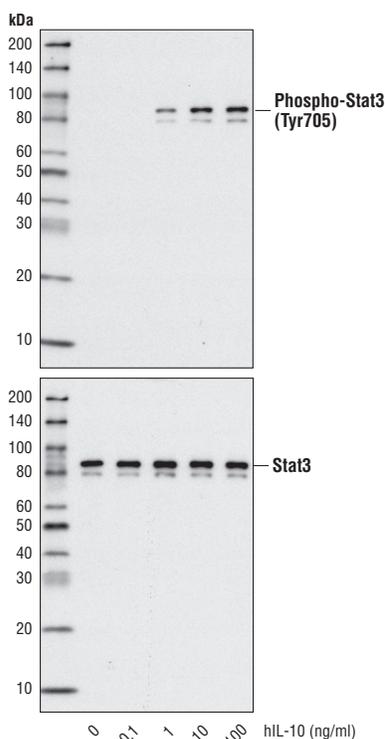


The purity of recombinant hIL-10 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hIL-10 and staining overnight with Coomassie Blue.

**Bioactivity:** The bioactivity of recombinant hIL-10 was determined in a MC/9 cell proliferation assay. The ED<sub>50</sub> of each lot is between 0.3-1.3 ng/ml.



The proliferation of MC/9 cells treated with increasing concentrations of hIL-10 in the presence of 10 pg/ml mouse IL-4 was assessed. After 72 hours treatment with hIL-10, cells were incubated with a tetrazolium salt and the OD<sub>450</sub> - OD<sub>650</sub> was determined.



Western blot analysis of extracts from MC/9 cells, untreated or treated with hIL-10 for 20 minutes, using Phospho-Stat3 (Tyr705) (D3A7) XP™ Rabbit mAb #9145 (upper) or Stat3 Antibody #9132 (lower).

**Formulation:** With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg hIL-10.

Carrier free: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2.

**Reconstitution:**

With carrier: Add sterile PBS, or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final hIL-10 concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS, or PBS containing protein to minimize absorption of hIL-10 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hIL-10 should be greater than 50 µg/ml.

**Storage:** Stable in lyophilized state at 4°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

**Applications:** Optimal concentration for the desired application should be determined by the user.

**Background:** IL-10 is an anti-inflammatory cytokine that is produced by T cells, NK cells and macrophages (1,2). IL-10 initiates signal transduction by binding to a cell surface receptor complex consisting of IL-10 RI and IL-10 RII (1). Binding of IL-10 leads to the activation of Jak1 and Tyk2, which phosphorylates Stat-3 (1,3). The anti-inflammatory activity of IL-10 is due to its ability to block signaling through other cytokine receptors, notably IFNγ receptor, by upregulating expression of SOCS-1 (1,3). In addition, IL-10 promotes T cell tolerance by inhibiting tyrosine phosphorylation of CD28 (4,5). IL-10 is an important negative regulator of the immune response, which allows for maintenance of pregnancy (1). In contrast, increased IL-10 levels contribute to persistent *Leishmania major* infections (6).

**Background References:**

- (1) Pestka, S. et al. (2004) *Immunol Rev* 202, 8-32.
- (2) Akuffo, H. et al. (1999) *Clin Exp Immunol* 117, 529-34.
- (3) O'Shea, J.J. and Murray, P.J. (2008) *Immunity* 28, 477-87.
- (4) Akdis, C.A. and Blaser, K. (2001) *Immunology* 103, 131-6.
- (5) Akdis, C.A. et al. (2000) *FASEB J* 14, 1666-8.
- (6) Von Stebut, E. (2000) *Eur J Dermatol* 17, 115-22.

# Material Safety Data Sheet (MSDS) for Human Interleukin-10 (hIL-10)



## I. Identification:

**Product name:** Human Interleukin-10 (hIL-10)  
**Product Catalog:** 8903  
**CAS#:** 130068-27-8  
**Manufacturer Supplier:** Cell Signaling Technology  
 3 Trask Lane  
 Danvers, MA 01923 USA  
 978-867-2300 TEL  
 978-867-2400 FAX  
 978-578-6737 EMERGENCY TEL

## II. Composition/Information:

**Substance Name:** Interleukin-10, human, recombinant

Ingredients:	Carrier-Free	With Carrier	CAS#
Human interleukin-10, recombinant	98%	5%	130068-27-8
Bovine serum albumin	0%	95%	9048-46-8

## III. Hazard Identification:

**!! CAUTION: This product is not for use in humans. It is intended for research purposes only.** To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been established.

EMERGENCY OVERVIEW: No known hazards

## IV. First Aid Measures:

**Inhalation:** If inhaled, remove to fresh air. If breathing is difficult, get medical attention.  
**Ingestion:** If swallowed, wash out mouth with water provided person is conscious. Get medical attention.  
**Skin exposure:** In case of contact, immediately wash skin with soap and water for at least 15 minutes. Remove contaminated clothing. Wash clothing before reuse.  
**Eye exposure:** In case of contact with eyes, immediately flush eyes with water for at least 15 minutes. Get medical attention.

## V. Fire Fighting Measures:

**Flash Point:** Data not available.  
**Autoignition Temperature:** Data not available.  
**Explosion:** Data not available.  
**Fire extinguishing media:** Water spray, dry chemical, alcohol foam, or carbon dioxide.  
**Firefighting:** Wear protective clothing and self-contained breathing apparatus to prevent contact with skin and eyes. May emit toxic fumes under fire conditions.

**VI. Accidental Release Measures:** Wear appropriate personal protective equipment. Sweep up material and avoid raising dust. Transfer to a closed chemical waste container for disposal. Wash spill site after material has been picked up for disposal.

## VII. Handling And Storage:

Store in tightly closed container at -20°C. Avoid inhalation. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

## VIII. Exposure Controls/Personal:

**Ventilation System:** A system of local and/or general exhaust is recommended.  
**Skin Protection:** Wear compatible chemical resistant gloves and protective clothing.  
**Eye protection:** Wear protective safety glasses or chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

## IX. Physical And Chemical Properties

**Appearance:** lyophilized powder  
**pH:** data not available  
**Melting Point:** data not available  
**Boiling Point:** data not available  
**Freezing Point:** data not available  
**Volatile Organic Compounds:** data not available  
**Solubility in water:** soluble

## X. Stability and Reactivity:

**Stability:** Stable under normal conditions.  
**Hazardous Decomposition:** Data not available.

## XI. Toxicological Information:

**Acute Effects:** Not established.  
**Chronic Effects:** Not established.

**Potential Health Effects:** Not established.

**Inhalation:** May be harmful, may be irritating to mucous membranes and upper respiratory tract.  
**Skin:** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes:** May be harmful if absorbed through the eyes. May cause eye irritation.  
**Ingestion:** May be harmful if swallowed.

**XII. Ecological Information:** No data available.

**XIII. Disposal Considerations:** Dispose of in accordance with federal, state, local environmental regulations.

## XIV. Transport Information:

**DOT:** This substance is considered Non-Hazardous for transport.

**IATA:** This substance is considered Non-Hazardous for air transport.

## XV. Regulatory Information:

**EU Regulations/Classifications/Labeling Information:** None.  
**US Regulatory Information:**  
**SARA Listed:** No.  
**Canada (WHMIS):** DSL No, NDSL No.

## XVI. Other Information:

This compound is sold only for research use only. It is not for use in humans. To the best of our knowledge, this document is accurate. It is intended to serve as a guide for safe use of this product in a laboratory setting by experienced personnel. The burden of safe use of this material rests entirely with the user. Cell Signaling Technology, Inc., shall not be held liable for any damage resulting from the handling of or from contact with the above product.