

Mouse Interleukin-22 (mIL-22)

<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. 04/08/10



Cell Signaling
TECHNOLOGY®

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

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

Web ■ www.cellsignaling.com

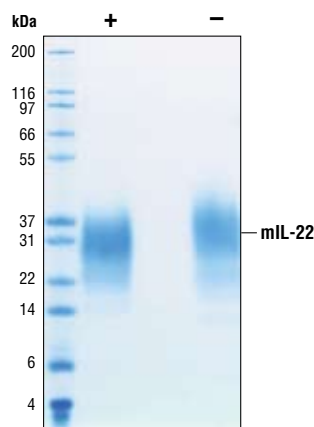
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Source: Recombinant mouse IL-22 (mIL-22) Leu34-Val179 (Accession #NP_058667) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant mIL-22 contains no "tags" and the nonglycosylated protein has a calculated MW of 16,640. DTT-reduced and non-reduced protein migrate as 31 kDa polypeptides. Lower mobility and heterogeneity in SDS PAGE are due to glycosylation. The expected amino-terminal LPVNT of recombinant mIL-22 was verified by amino acid sequencing.

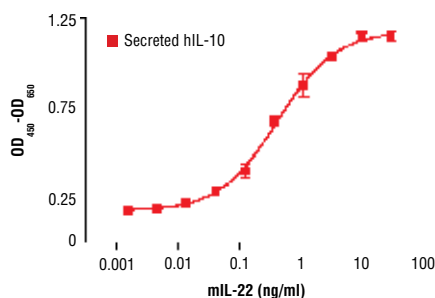
Endotoxin: Less than 0.01 ng endotoxin/1 µg mIL-22.

Purity: >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant mIL-22. All lots are greater than 98% pure.

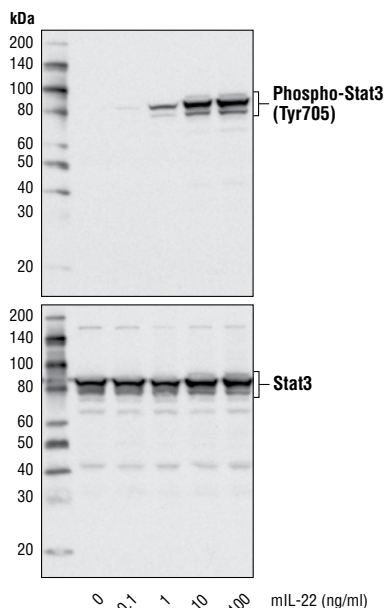


The purity of recombinant mIL-22 was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant mIL-22 and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant mIL-22 was determined by its ability to induce IL-10 production by COLO 205 cells. The ED₅₀ of each lot is between 0.2-0.8 ng/ml.



The production of IL-10 by COLO 205 cells cultured with increasing concentrations of mIL-22 was assessed. Media from cells incubated with mIL-22 for 48 hours was collected and assayed for IL-10 by ELISA and the OD₄₅₀-OD₆₅₀ was determined.



Western blot analysis of extracts from HT-29 cells, untreated or treated with mIL-22 for 15 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 mIL-22.

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 mIL-22 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 mIL-22 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock mIL-22 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-22, a member of the IL-10 family (1,2), is expressed by Th17 CD4+ T cells, activated T cells, Th1 cells and NK cells (3). Expression of IL-22 in combination with a select group of cytokines defines a subset of Th cells (4). IL-22 induces proinflammatory responses, drives production of antimicrobial peptides, and is involved in tissue-repair and wound-healing responses (1). The IL-22 receptor is a heterodimer of IL-22R1 and IL-10R2 (5). Expression of IL-22R is restricted to tissue-resident cells, particularly those of epithelial origin, whereas the IL-10R2 chain is expressed in many more cell types. IL-22 induces phosphorylation of Jak1 and Tyk2, leading to activation of Stat3 and, to a lesser extent, Stat1 and Stat5 (1). IL-22 responses can involve activation of the MEK-ERK-RSK, JNK-SAPK, and p38 pathways (1). Elevated levels of IL-22 have been associated with Crohn's disease and rheumatoid arthritis. IL-22 plays an essential role in host response to the pulmonary pathogen *Klebsiella pneumoniae* (6).

Background References:

- (1) Ouyang, W. et al. (2008) *Immunity* 28, 454-67.
- (2) Dumoutier, L. et al. (2000) *Proc Natl Acad Sci U S A* 97, 10144-9.
- (3) Takatori, H. et al. (2008) *Mod Rheumatol* 18, 533-41.
- (4) Eyerich, S. et al. (2009) *J Clin Invest* 119, 3573-85.
- (5) Nagalakshmi, M.L. et al. (2004) *Int Immunopharmacol* 4, 679-91.
- (6) Aujla, S.J. et al. (2008) *Nat Med* 14, 275-81.

Material Safety Data Sheet (MSDS) for Mouse Interleukin-22 (mIL-22)



Cell Signaling
TECHNOLOGY®

I. Identification:

Product name: Mouse Interleukin-22 (mIL-22)
Product Catalog: 5224
CAS#: n/a
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-22, mouse, recombinant, from human 293 cells
Synonym: mIL-22
CAS#: n/a

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

OSHA: No known hazards. This substance is not classified as dangerous according to Directive 67/548/EEC.

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 4°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
Flash Point:	data not available
Boiling Point:	data not available
Freezing Point:	data not available
Volatile Organic Compounds:	data not available
Solubility in water:	soluble in water

X. Stability and Reactivity:

Stability: Stable under normal conditions.
Conditions to avoid: Strong oxidizing agents
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 if inhaled. Causes respiratory tract irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes 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: Not dangerous goods.
ADR/RID: Not dangerous goods.
IMDG: Not dangerous goods.
IATA: Not dangerous goods.

XV. Regulatory Information:

Labeling according to EC Directives:
 This product does not need to be labeled, in accordance with EC Directives or respective laws.
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.