

Human Interleukin-1 α (hIL-1 α)

SC 10 μ g
(With Carrier)

SF 10 μ g
(Carrier Free)

Multi-milligram quantities available

New 08/10



Cell Signaling
TECHNOLOGY®

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orders@cellsignaling.com

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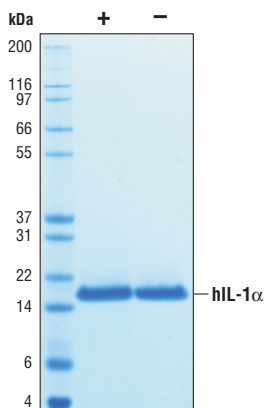
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Source: Recombinant human IL-1 α (hIL-1 α) Ser113-Ala271 (Accession #NP_000566) was produced in *E. coli* at Cell Signaling Technology.

Molecular Characterization: Recombinant hIL-1 α does not have a Met on the amino terminus and has a calculated MW of 18,063. DTT-reduced and non-reduced protein migrate as 18 kDa polypeptides. The expected amino-terminal SSPFS of recombinant hIL-1 α was verified by amino acid sequencing.

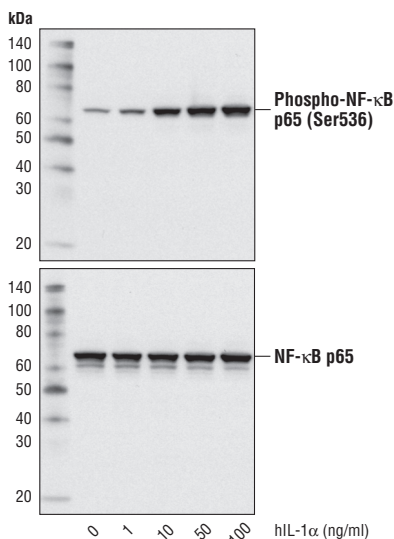
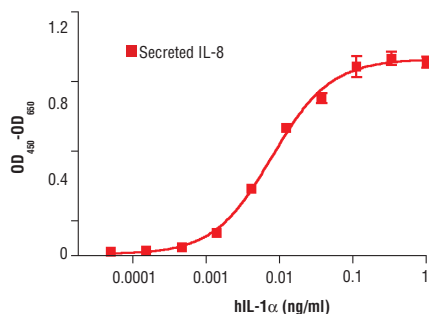
Endotoxin: Less than 0.01 ng endotoxin/1 μ g hIL-1 α .

Purity: >98% as determined by SDS-PAGE of 6 μ g reduced (+) and non-reduced (-) recombinant hIL-1 α . All lots are greater than 98% pure.



The purity of recombinant hIL-1 α was determined by SDS-PAGE of 6 μ g reduced (+) and non-reduced (-) recombinant hIL-1 α and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hIL-1 α was determined by its ability to induce IL-8 production by primary human fibroblasts. The ED₅₀ of each lot is between 5-15 pg/ml.



Western blot analysis of extracts from MCF7 cells, untreated or treated with hIL-1 α for 15 minutes, using Phospho-NF- κ B p65 (Ser536) (93H1) Rabbit mAb #3033 (upper) and NF- κ B p65 (E498) Antibody #3987 (lower).

Formulation: With carrier: Lyophilized from a 0.22 μ m filtered solution of PBS, pH 7.2 containing 4 mM DTT and 20 μ g BSA per 1 μ g hIL-1 α .

Carrier free: Lyophilized from a 0.22 μ m filtered solution of PBS, pH 7.2 containing 4mM DTT.

Reconstitution:

With carrier: Add sterile PBS containing 4 mM DTT or PBS containing 4 mM DTT and 1% bovine or human serum albumin or 5-10% FBS to a final hIL-1 α concentration of greater than 50 μ g/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS containing 4 mM DTT or PBS containing 4 mM DTT and protein to minimize absorption of hIL-1 α to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hIL-1 α should be greater than 50 μ g/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-1 α is a pro-inflammatory cytokine produced by activated monocytes, lymphocytes, and epithelial cells (1). IL-1 α is synthesized as an active precursor protein that appears to be cleaved by cytosolic proteases into its mature form (1,2). Often, precursor and mature forms of IL-1 α are primarily retained intracellularly rather than constitutively secreted. (1,2). Signaling by IL-1 α involves IL-1 α binding to an IL-1 accessory protein (IL-1-AcP) and then the complex binds to IL-1RI (1,2). Signaling occurs through activation of MAP kinase and NF- κ B pathways (1,2). IL-1 α also binds to an IL-1RII that lacks an intracellular signaling domain and thereby serves as a high affinity decoy receptor. IL-1 α activity is inhibited through IL-1R antagonist (IL-1Ra) that binds IL-1R1 but does not signal. IL-1 α has been shown to be a key mediator of virus-induced inflammatory responses in mice (3).

Background References:

- (1) Dinarello, C.A. (1996) *Blood* 87, 2095-147.
- (2) Allan, S.M. et al. (2005) *Nat Rev Immunol* 5, 629-40.
- (3) Di Paolo, N.C. et al. (2009) *Immunity* 31, 110-21.

◀ The production of human IL-8 by primary human fibroblasts cultured with increasing concentrations of hIL-1 α was assessed. Media from cells incubated with hIL-1 α for 24 hours was collected and assayed for human IL-8 by ELISA and the OD₄₅₀-OD₆₅₀ was determined.

Material Safety Data Sheet (MSDS) for Human Interleukin-1 α (hIL-1 α)



I. Identification:

Product name: Human Interleukin-1 α (hIL-1 α)
Product Catalog: 5236
CAS#: None
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. 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.

III. Composition/Information:

Substance Name: Human Interleukin-1 α , recombinant, from E.coli
Synonyms: hIL-1 α
CAS#: None

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: 7.2
Melting Point: data not available
Boiling Point: data not available
Flash 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.

Materials 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:

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.