Sterile

#3583

Human CD40 Ligand (hCD40L)

☐ SC 50 µg (With Carrier)

☐ SF 50 µg (Carrier Free)

Multi-milligram quantities available

rev. 03/01/12

Cell Signaling TECHNOLOGY

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

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

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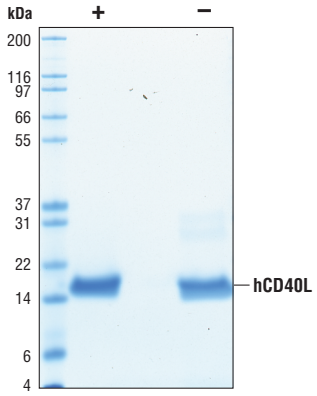
Source: Recombinant human CD40 Ligand (hCD40L) Met113-Leu261 (Accession #P29965) was produced in *E. coli* at Cell Signaling Technology.

Molecular Characterization: Recombinant hCD40L has a Met on the amino terminus and has a calculated MW of 16,184. DTT-reduced and non-reduced protein migrate as 16 kDa polypeptides. The expected amino terminus MQKGD of recombinant hCD40L was verified by amino acid sequencing.

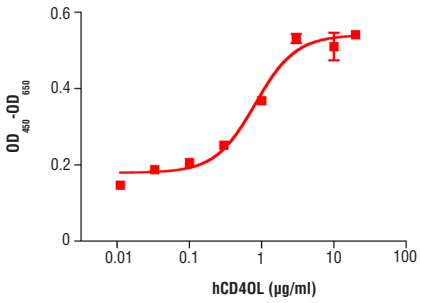
Endotoxin: Less than 0.01 ng endotoxin/1 µg hCD40L.

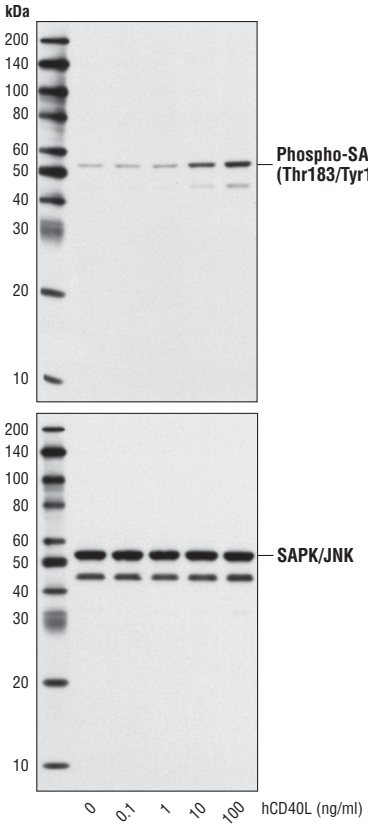
Purity: >98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hCD40L. All lots are greater than 98% pure.



The purity of recombinant hCD40L was determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hCD40L and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hCD40L was determined in a cell proliferation assay using human B cells. The ED_{50} of each lot is between 0.5-2 µg/ml.





Western blot analysis of extracts from THP-1 cells, untreated or treated with hCD40L for 15 minutes, using Phospho-SAPK/JNK (Thr183/Tyr185) (81E11) Rabbit mAb #4668 (upper) and SAPK/JNK (56G8) Rabbit mAb #9258 (lower).

◀ *The proliferation of human B cells treated with increasing concentrations of hCD40L in the presence of 20 ng/ml human IL-4 (#8919) was assessed. After 96 hour treatment with hCD40L, cells were incubated with a tetrazolium salt and the OD_{450}-OD_{650} was determined.*

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.2 containing 20 µg BSA per 1 µg hCD40L.

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 hCD40L 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 hCD40L to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hCD40L 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: CD40 Ligand (CD40L), a member of the TNF superfamily of ligands, is expressed as either a membrane-bound or soluble homotrimer (1). Both membrane-bound and soluble forms of CD40L have biological activity (1,2). CD40L is expressed primarily on activated T cells; however, mast cells, basophils, and NK cells may also express CD40L (1). CD40L functions as an important T cell co-stimulatory molecule and enhances T-dependent B cell responses (1,2). CD40L binds CD40, which is a receptor expressed on B cells, dendritic cells, and macrophages (1). Binding of CD40L to CD40 leads to the recruitment of TRAF proteins (TRAFs 2,3,5, and 6) resulting in the activation of the JNK and NF-κB pathways (1,2).

Background References:

(1) van Kooten, C. et al. (2000) *J Leukoc Biol* 67, 2-17.

(2) Peters, A.L. et al. (2009) *Semin Immunol* 21, 293-300.

#3583 MSDS

Material Safety Data Sheet (MSDS) for Human CD40 Ligand

I. Identification:

Product name: Human CD40 Ligand
Product Catalog: 3583
CAS#: 147205-72-9
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:

This product is a lyophilized mixture of substances. According to 29 CFR 1910.1200(d), mixtures with hazardous ingredients at less than <1% and carcinogens at less than < 0.1% are considered non-hazardous.

Substance Name: Human CD40 Ligand, recombinant

Synonyms: CD154 antigen, T cell antigen gp39, T-BAM, Tnf-related activation protein, Trap ligand, tumor necrosis factor-related activation protein.

Ingredients:	Carrier-Free	With Carrier	CAS#
Human CD40L	98%	5%	147205-72-9
Bovine serum albumin	0%	95%	9048-46-8

III. Hazard Identification:

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: No data available.
Autoignition Temperature: No data available.
Explosion: No data 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.

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 in phosphate buffered saline

X. Stability and Reactivity:

Stability: Stable under normal conditions.
Conditions/materials to avoid: data not available
Hazardous Decomposition: Data not available.

XI. Toxicological Information:

Acute Effects: Data not available.
Chronic Effects: Data not available.

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 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.