



### Synonym

CD40LG,CD154,CD40L,HIGM1,IGM,IMD3,T-BAM,TNFSF5,TRAP,gp39

### Source

Human CD40 Ligand, His,Flag Tag, premium grade (CDL-H52Db) is expressed from human 293 cells (HEK293). It contains AA Gly 116 - Leu 261 (Accession # [P29965-1](#)) trimer Design.

Predicted N-terminus: His

*It is produced under our rigorous quality control system that incorporates a comprehensive set of tests including sterility and endotoxin tests. Product performance is carefully validated and tested for compatibility for cell culture use or any other applications in the early preclinical stage. When ready to transition into later clinical phases, we also offer a custom GMP protein service that tailors to your needs. We will work with you to customize and develop a GMP-grade product in accordance with your requests that also meets the requirements for raw and ancillary materials use in cell manufacturing of cell-based therapies.*

### Molecular Characterization

This protein carries a polyhistidine tag at the N-terminus, followed by a flag tag.

The protein has a calculated MW of 49.9 kDa. The protein migrates as 45-55 kDa when calibrated against [Star Ribbon Pre-stained Protein Marker](#) under non-reducing (NR) condition (SDS-PAGE) due to glycosylation.

### Endotoxin

Less than 0.1 EU per µg by the LAL method.

### Sterility

Negative

### Mycoplasma

Negative.

### Purity

>90% as determined by SDS-PAGE.

>95% as determined by SEC-MALS.

### Formulation

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

### Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

### Storage

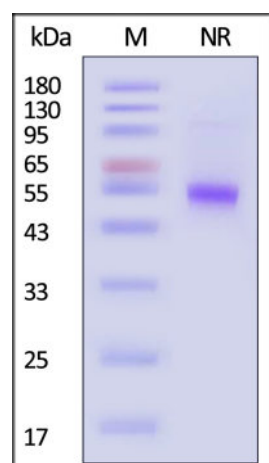
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

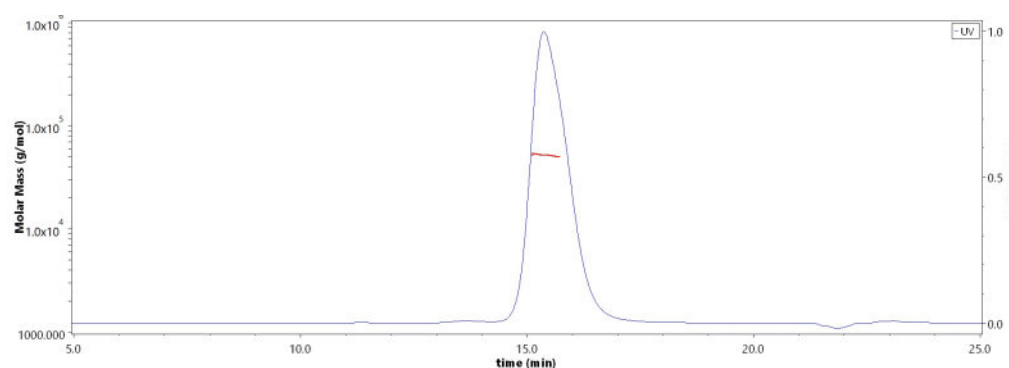
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

### SDS-PAGE



Human CD40 Ligand, His,Flag Tag, premium grade on SDS-PAGE under non-reducing (NR) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With [Star Ribbon Pre-stained Protein Marker](#)).

### SEC-MALS



The purity of Human CD40 Ligand, His,Flag Tag, premium grade (Cat. No. CDL-H52Db) is more than 95% and the molecular weight of this protein is around 50-65 kDa verified by SEC-MALS.

### Report

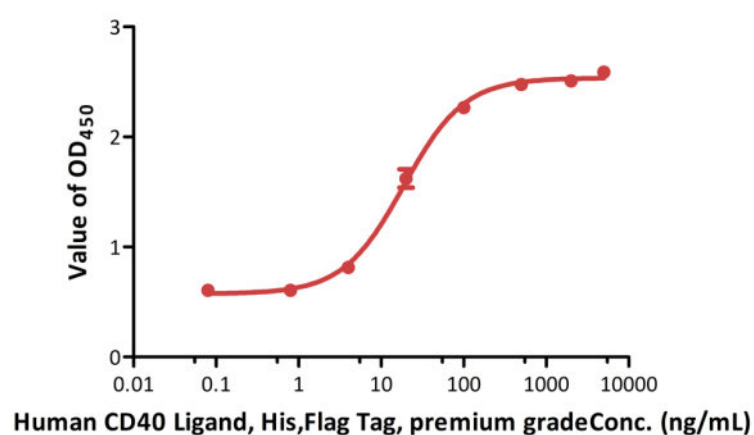
Discounts, Gifts,  
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**Bioactivity-Bioactivity CELL BASE**

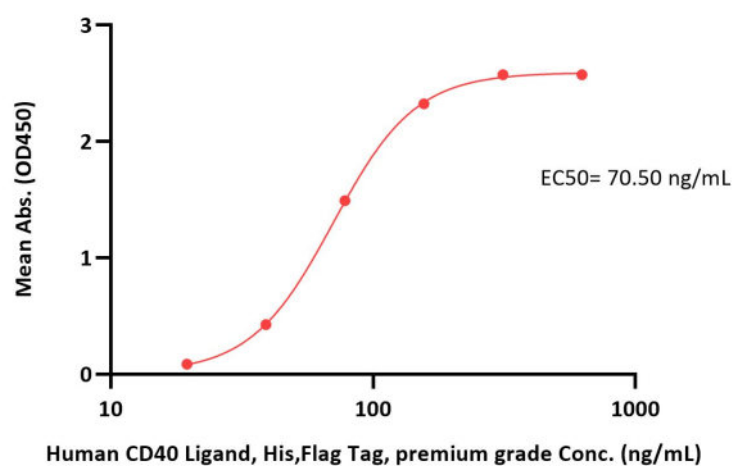
Human CD40 Ligand, His,Flag Tag, premium grade stimulates secretion of IL-6 by human B cells



Human CD40 Ligand, His,Flag Tag, premium grade (Cat. No. CDL-H52Db) stimulates secretion of IL-6 by human B cells. The ED50 for this effect is 18.76-19.45 ng/mL in the presence of 5 ng/mL of Recombinant Human IL-4 (Routinely tested).

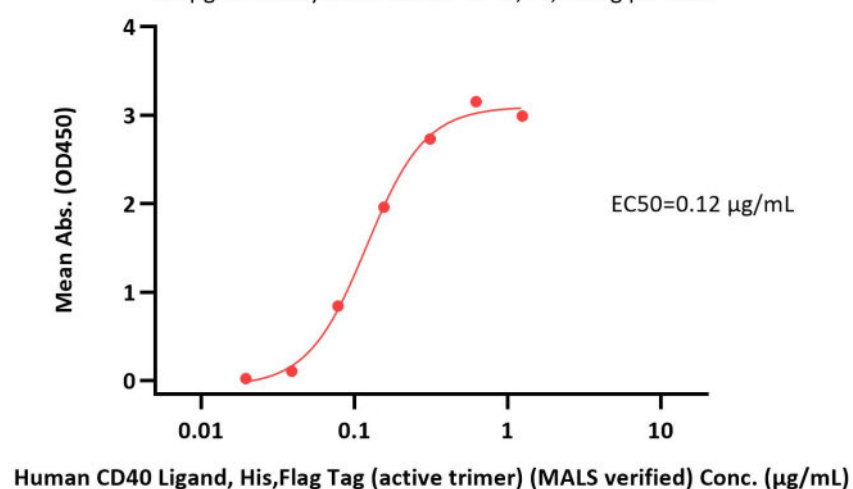
**Bioactivity-ELISA**

Human CD40 Ligand, His,Flag Tag, premium grade ELISA  
0.5 µg of Human CD40, Fc Tag per well



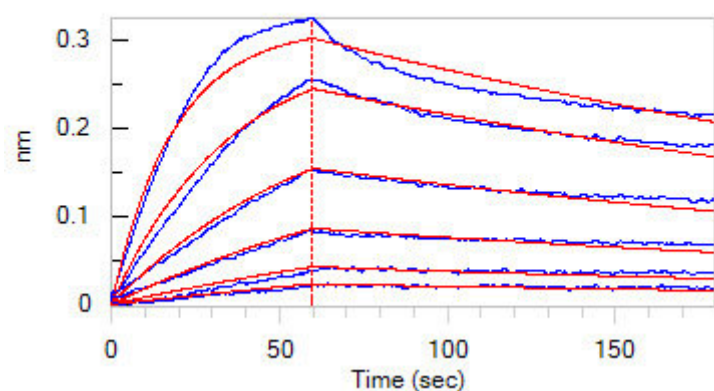
Immobilized Human CD40 Protein, Fc Tag (Cat. No. CD0-H5253) at 5 µg/mL (100 µL/well) can bind Human CD40 Ligand, His,Flag Tag, premium grade (Cat. No. CDL-H52Db) with a linear range of 20-156 ng/mL (QC tested).

Human CD40 Ligand, His,Flag Tag (active trimer) (MALS verified) ELISA  
0.5 µg of Biotinylated Human CD40, Fc,Avitag per well



Immobilized Biotinylated Human CD40, Fc,Avitag (Cat. No. TN5-H82F9) at 5 µg/mL (100 µL/well) on Streptavidin (Cat. No. STN-N5116) pre-coated (0.5 µg/well) plate, can bind Human CD40 Ligand, His,Flag Tag, premium grade (Cat. No. CDL-H52Db) with a linear range of 0.039-1.25 µg/mL (Routinely tested).

**Bioactivity-BLI**



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Loaded Human CD40, Fc Tag (Cat. No. CD0-H5253) on Protein A Biosensor, can bind Human CD40 Ligand, His,Flag Tag, premium grade (Cat. No. CDL-H52Db) with an affinity constant of 1.58 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

## Background

CD40 ligand is also known as CD40L, CD154, TNFSF5 and T-cell antigen Gp39, is a single-pass type I I membrane protein which belongs to the TNF superfamily of molecules. CD40 ligand is expressed predominantly on activated CD4<sup>+</sup> T lymphocytes, and also found in other types of cells, including platelets, mast cells, macrophages, basophils, NK cells, B lymphocytes, as well as non-haematopoietic cells (smooth muscle cells, endothelial cells, and epithelial cells). Although all monomeric, dimeric and trimeric forms of soluble CD40 ligand can bind to CD40, the trimeric form of soluble CD40 ligand has the most potent biological activity through oligomerization of cell surface CD40, a common feature of TNF receptor family members.

CD40 ligand binds to CD40 on antigen-presenting cells (APC), which leads to many effects depending on the target cell type. In general, CD40 ligand plays the role of a costimulatory molecule and induces activation in APC in association with T cell receptor stimulation by MHC molecules on the APC. In total CD40 ligand has three binding partners: CD40,  $\alpha 5\beta 1$  integrin and  $\alpha IIb\beta 3$ . CD40 ligand regulates B cell function by engaging CD40 on the B cell surface. A defect in this gene results in an inability to undergo immunoglobulin class switch and is associated with hyper IgM syndrome.

## Clinical and Translational Updates

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