

Human Recombinant CD40 Ligand

Cluster of differentiation 40 ligand

Catalog #78162 50 µg

Catalog #78162.1 500 µg

Product Description

CD40 ligand is a type II transmembrane glycoprotein that belongs to the tumor necrosis factor (TNF) superfamily (Quezada et al.). CD40 ligand forms a bioactive homotrimer that exists as both soluble and membrane-bound forms (Khandekar et al.). CD40 ligand is expressed on T cells, monocytes, basophils, eosinophils, platelets, dendritic cells, and endothelial cells. Its receptor, CD40, is expressed on B cells, dendritic cells, macrophages, monocytes, platelets, endothelial cells, and epithelial cells (van Kooten & Banchereau). Binding of CD40 ligand to CD40 stimulates B cell proliferation, immunoglobulin class switching, antibody secretion, and T cell-dependent humoral responses. Dysregulation of CD40 ligand contributes to immune deficiency in HIV and AIDS (Rickert et al.). CD40 ligand has also been linked to the pathology of atherosclerosis, atherothrombosis, and restenosis (Hassan et al.).

Product Information

Alternative Names:	CD154, CD40L, CD40 antigen ligand, hCD40L, HIGM1, hyper IgM syndrome, IMD3, T-B cell-activating molecule, T-cell antigen Gp39, TNF-related activation protein, TNFSF5, TRAP, Tumor necrosis factor ligand superfamily member 5
Accession Number:	P29965
Amino Acid Sequence:	MQKGDQNPQI AAHVISEASS KTTSVLQWAE KGYTMSNNL VTLENGKQLT VKRQGLYYIY AQVTFCNRE ASSQAPFIAS LWLKSPGRFE RILLRAANTH SSAKPCGQQS IHLGGVFELQ PGASVFNVT DPSQVSHGTG FTSFGLLKL
Predicted Molecular Mass:	16.3 kDa
Species:	Human
Product Formulation:	Lyophilized from a sterile-filtered solution containing sodium phosphate, pH 7.5.
Source:	E. coli
Purity:	≥ 95%

Specifications

Activity:	The specific activity is $\geq 1 \times 10^4$ units/mg ($EC_{50} \leq 100$ ng/mL), as determined by the ability to induce bioluminescence in engineered CD40L bioassay cells.
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.1 EU/ μ g protein.

Preparation and Storage

Stability and Storage:	Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data

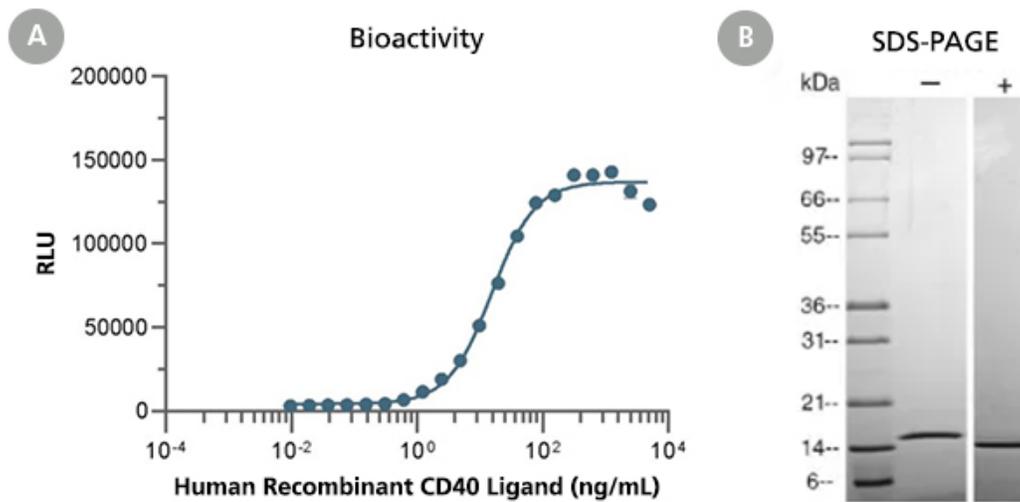


Figure 1. Biological Activity and Molecular Mass of Human Recombinant CD40 Ligand

(A) The biological activity of Human Recombinant CD40 Ligand was tested by its ability to induce bioluminescence in engineered CD40L bioassay cells. The EC₅₀ is defined as the effective concentration of the ligand at which bioluminescence is at 50% of maximum. The EC₅₀ in the example above is ≤ 100 ng/mL. (B) 1 μ g of Human Recombinant CD40 Ligand was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant CD40 Ligand has a predicted molecular mass of 16.3 kDa.

Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines, or contact us at techsupport@stemcell.com.

References

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- Quezada SA et al. (2004) CD40/CD154 interactions at the interface of tolerance and immunity. *Annu Rev Immunol* 22: 307–28.
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