Cytokines

Mouse Recombinant CD40 Ligand

Cluster of differentiation 40 ligand

Catalog #	78205	100 µg
	78205.1	500 µg

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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 exist 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 infection 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:	Cluster of differentiation 40, gp39, T-BAM, T-cell antigen Gp39, TNF-related activation protein, TNFSF5, TRAP, Tumor necrosis factor ligand superfamily member 5
Accession Number:	P27548
Amino Acid Sequence:	MQRGDEDPQI AAHVVSEANS NAASVLQWAK KGYYTMKSNL VMLENGKQLT VKREGLYYVY TQVTFCSNRE PSSQRPFIVG LWLKPSSGSE RILLKAANTH SSSQLCEQQS VHLGGVFELQ AGASVFVNVT EASQVIHRVG FSSFGLLKL
Predicted Molecular Mass:	16.4 kDa
Species:	Mouse
Cross Reactivity:	Reported to be species-specific
Formulation:	Lyophilized from a sterile-filtered solution containing sodium phosphate and arginine, pH 7.5.
Source:	E. coli

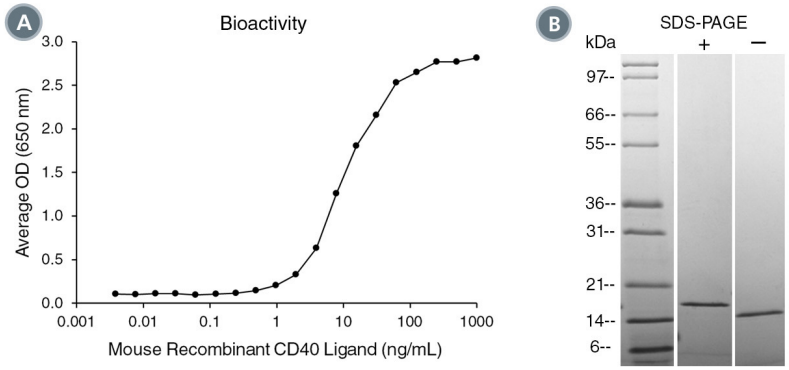
Specifications

Activity:	The specific activity is ≥ 2.0 x 10^4 units/mg (EC50 ≤ 50 ng/mL) as determined by an alkaline phosphatase activity assay using HEK-Blue™ CD40L cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Bring vial and sterile water to room temperature (15 - 25°C). 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. Let solution sit for 1 minute at room temperature (15 - 25°C). If precipitate is observed, centrifuge at 16,000 x g for 1 minute. Remove supernatant and transfer to a new tube, taking care not to disturb the pellet. Discard the pellet. A 10% overfill has been added to compensate for any loss of protein in the precipitate. 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



(A) The biological activity of Mouse Recombinant CD40 Ligand was tested by its ability to induce alkaline phosphatase activity in HEK-Blue™ CD40L responsive indicator cells. Alkaline phosphatase activity was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the ligand at which alkaline phosphatase activity is at 50% of maximum. The EC50 in the example above is 10.6 ng/mL.
(B) 1 µg of Mouse Recombinant CD40 Ligand was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Mouse Recombinant CD40 Ligand has a predicted molecular mass of 16.4 kDa.

Related Products

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References

Hassan GS et al. (2012) CD40 ligand: a neo-inflammatory molecule in vascular diseases. Immunobiology 217(5): 521–32.
Khandekar SS et al. (2001) Determination of carbohydrate structures N-linked to soluble CD154 and characterization of the interactions of CD40 with CD154 expressed in Pichia pastoris and Chinese hamster ovary cells. Protein Expr Purif 23(2): 301–10.
van Kooten C & Banchereau J. (1997) Functions of CD40 on B cells, dendritic cells and other cells. Curr Opin Immunol 9(3): 330–7.
Quezada SA et al. (2004) CD40/CD154 interactions at the interface of tolerance and immunity. Annu Rev Immunol 22: 307–28.
Rickert RC et al. (2011) Signaling by the tumor necrosis factor receptor superfamily in B-cell biology and disease. Immunol Rev 244(1): 115–33.