# Human CD40-Ligand
premium grade

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## 1. Description

**Products** Human CD40-Ligand, premium grade.

Recombinant human CD40 ligand.

| Content in µg | Order no. |
|---|---|
| 10 | 130-096-711 |
| 25 | 130-096-712 |
| 100 | 130-096-713 |
| 500 | 130-096-714 |

**Biological activity** The $ED_{50}$ is ≤250 ng/mL corresponding to an activity of $\geq 4 \times 10^3$ U/mg. Lot-specific activities are stated in the Certificate of Analysis (www.miltenyibiotec.com/certificates).

▲ **Note:** The $ED_{50}$ of multimerized Human CD40-Ligand is determined by proliferation assay using enriched $CD19^+$ B cells in the presence of the cross-linking antibody and 50 IU/mL interleukin 4 according to Spriggs, M.K. *et al.*[1] Activity was also shown by activation assay using enriched $CD19^+$ B cells in the presence of 50 IU/mL interleukin 4.

**Primary structure** Single, non-glycosylated polypeptide chain (219 amino acid residues) comprising an N-terminal trimerization domain fused to the extracellular domain of CD40-Ligand.

**Molecular mass** 23.0 kDa.

**Source** Produced in *E. coli*.

**Product format** Lyophilized from a filtered (0.2 µm) buffer solution.

**Stabilizer** Mannitol and trehalose.

**Purity** >97% as determined by SDS-PAGE analysis.

**Endotoxin level** Low endotoxin (<0.1 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

**Storage** Lyophilized Human CD40-Ligand, premium grade should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

**Reconstitution** It is recommended to reconstitute lyophilized Human CD40-Ligand, premium grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

### 1.1 Background information

CD40-Ligand, also known as CD40L, CD154, TRAP, or TNFSF5 is a member of the TNF superfamily transiently expressed on the surface of activated $CD4^+$ T lymphocytes. It is either expressed membrane-bound or proteolytically released as a soluble form which comprises 2/3 of the extracellular domain. Its receptor CD40 is found on antigen-presenting cells such as B cells, dendritic cells, and macrophages. CD40L-CD40 interaction is important in T cell-APC (antigen-presenting cell) interaction and is e.g. involved in B cell differentiation and proliferation, isotype class-switching, and protection of B cells from apoptosis.

### 1.2 Applications

Human CD40-Ligand can be used for a variety of applications, including:

- Stimulation of B cell activation and proliferation.
- Stimulation of dendritic cell maturation.
- Induction of cytokine production in peripheral blood monocytes and T cells.

Optimal concentration for a specific application should be determined by a dose-response experiment.

## 2. References


1. Spriggs, M.K. *et al.* (1992) Recombinant human CD40 ligand stimulates B cell proliferation and immunoglobulin E secretion. J. Exp. Med. 176: 1543–1550.


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