Miltenyi Biotec

Human CD40-Ligand Multimer Kits

Human CD40-Ligand Multimer Kit (100 µg)	130-098-775
Human CD40-Ligand Multimer Kit (500 µg)	130-098-776

Contents

1. Description
   - 1.1 Background information
   - 1.2 Applications
2. References

1. Description

This product is for research use only.

Components

100 µg Human CD40-Ligand:
Recombinant human CD40-Ligand, premium grade

0.2 mL Cross-Linking Antibody

or

500 µg Human CD40-Ligand:
Recombinant human CD40-Ligand, premium grade

1 mL Cross-Linking Antibody

Reconstitution

It is recommended to reconstitute lyophilized Human CD40-Ligand with deionized sterile filtered water to a final concentration of 0.5 mg/mL in a volume of 200 µL (for 100 µg size) or 1000 µL (for 500 µg size) and store at –20 °C.
To increase the biological activity, it is highly recommended to multimerize Human CD40-Ligand and Cross-Linking Antibody. Therefore, equal volumes of both components (e.g. 200 µL of the reconstituted CD40-Ligand and 200 µL of the Cross-Linking Antibody) should be incubated together for 30 minutes at room temperature (19–25 °C) prior to cell application.

Storage

The Cross-Linking Antibody should be stored at 2–8 °C. Human CD40-Ligand should be stored at –20 °C. The expiration date is indicated on the vial label.

Detailed information of Human CD40-Ligand:

Biological activity

The ED_{50} is ≤250 ng/mL corresponding to a specific activity of ≥4×10^3 U/mg. The biological activity of the specific cytokine lot is indicated on 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

Trehalose and mannitol.

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.

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. The CD40-Ligand Multimer Kit contains the CD40-Ligand and a cross-linking antibody for multimerization to increase the biological activity of CD40-Ligand.

1.2 Applications

Human CD40-Ligand Multimer Kit or Human CD40-Ligand may 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.

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.
2. Banchereau, J. *et al.* (1994) The CD40 antigen and its ligand. Annu. Rev. Immunol. 12: 881–922.

Refer to **www.miltenyibiotec.com** for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com/local to find your nearest Miltenyi Biotec contact.

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