# Recombinant Human CD40 Ligand/TNFSF5 aa 108-261

Catalog Number: 6245-CL/CF

## DESCRIPTION

| | |
|---|---|
| **Source** | *E. coli*-derived<br>Glu108-Leu261, with an N-terminal Met<br>Accession # P29965 |
| **N-terminal Sequence Analysis** | Met |
| **Predicted Molecular Mass** | 16.9 kDa (monomer) |

## SPECIFICATIONS

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|---|---|
| **SDS-PAGE** | 18 kDa, reducing conditions |
| **Activity** | Measured in a cell proliferation assay using B cell-enriched peripheral blood mononuclear cells (PBMC) in the presence of IL-4. Spriggs, M.K. *et al*. (1992) J. Exp. Med. **176**:1543.<br>The $ED_{50}$ for this effect is typically 1-3 µg/mL in the presence of 20 ng/mL of recombinant human IL-4. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >97%, by SDS-PAGE under reducing conditions and visualized by silver stain. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in $NaH_2PO_4$, NaCl and EDTA. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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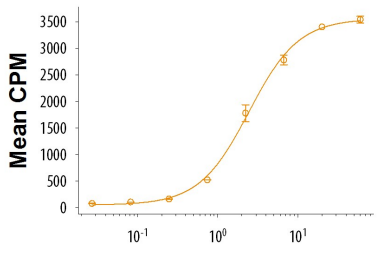
|---|---|
| **Reconstitution** | Reconstitute at 500 µg/mL in PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 3 months, 2 to 8 °C under sterile conditions after reconstitution. |

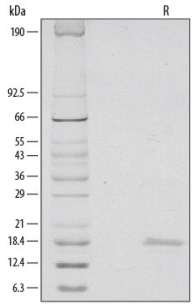
## DATA

**Bioactivity**




Recombinant Human CD40 Ligand/TNFSF5 (aa 108-261) (Catalog # 6245-CL/CF) stimulates cell proliferation using B cell-enriched peripheral blood mononuclear cells (PBMC) in the presence of IL-4. The $ED_{50}$ for this effect is typically 1-3 µg/mL in the presence of 20 ng/mL of Recombinant Human IL-4 (Catalog # 204-IL).

**SDS-PAGE**




1 µg/lane of Recombinant Human CD40 Ligand/TNFSF5 (aa 108-261) was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 18 kDa.



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## BACKGROUND

Human CD40 LigandCD40 Ligand, also known as TNFSF, CD154, TRAP, and gp39, is a 34-39 kDa type II transmembrane glycoprotein that belongs to the TNF superfamily (1-3). Mature human CD40 Ligand consists of a 22 amino acid (aa) cytoplasmic domain, a transmembrane segment, and an 215 aa extracellular region (4, 5). The extracellular domain of human CD40 Ligand shares 74% and 76% aa sequence identity with mouse and rat CD40 Ligand, respectively. Similar to other TNF superfamily members, CD40 Ligand forms a bioactive homotrimer, both as membrane bound and soluble forms (6-9). The 18 kDa soluble form (aa 113-261) arises from proteolytic processing. Mutation and alternative splicing generate additional forms of CD40 Ligand that are often truncated or non-trimerizable (8). CD40 Ligand is expressed on platelets, as well as on activated T cells and B cells, basophils, eosinophils, fibroblasts, mast cells, monocytes, natural killer cells, vascular endothelial cells, and smooth muscle cells. CD40 Ligand binds to CD40, which is expressed on the surface of B cells, dendritic cells, macrophages, monocytes, platelets, endothelial, and epithelial cells (10). The interaction of CD40 Ligand with CD40 initiates signaling in both CD40 and CD40 Ligand expressing cells (11). CD40 ligation by CD40 Ligand promotes B cell activation and T cell-dependent humoral responses (12, 13). CD40 Ligand dysregulation on T cells and antigen presenting cells contributes to the immune deficiency associated with HIV infection and AIDS (14, 15). It is also implicated in the pathology of multiple cardiovascular diseases including atherosclerosis, atherothrombosis, and restenosis (16, 17).

**References:**

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