Recombinant Rat CD40 Ligand/TNFSF5

Catalog Number: 8414-CL/CF

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived

HA (YPYDVPDYA)	GCN4-IZ	GGGSGGGSGGGS	Rat CD40 Ligand (Met112-Leu260 Accession # Q9Z2V2

N-terminus C-terminus

N-terminal Sequence Analysis Tyr

Predicted Molecular Mass 22 kDa

SPECIFICATIONS

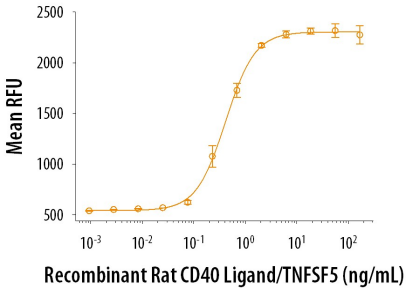
SDS-PAGE	22 - 30 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using mouse splenic B cells in the presence of IL-4. Banchereau, J. *et al.* (1991) Science **251**:70. The ED_{50} for this effect is typically 0.15-0.9 ng/mL in the presence of 0.1 µg/mL of the cross-linking antibody, Mouse Anti-Hemagglutinin/HA Peptide Monoclonal Antibody (Catalog # MAB060).
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in sterile PBS and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

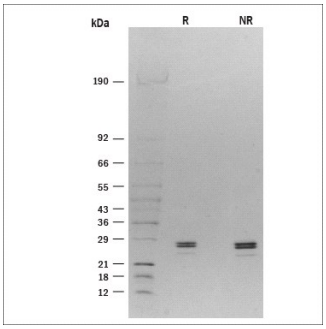
DATA

Bioactivity



Recombinant Rat CD40 Ligand (Catalog# 8414-CL/CF) induces cell proliferation by mouse splenic B cells in the presence of IL-4. The ED_{50} for this effect is typically 0.15-0.9 ng/mL in the presence of 0.1 µg/mL of the cross-linking antibody, Mouse Anti-Hemagglutinin/HA Peptide Monoclonal Antibody (Catalog # MAB060).

SDS-PAGE



1 µg/lane of Recombinant Rat CD40 Ligand/TNFSF5 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing R bands at 26, 28 kDa and NR bands at 26, 28 kDa.

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BACKGROUND

CD40 Ligand, also known as TNFSF5, CD154, TRAP, or gp39, is a 33-39 kDa type II transmembrane glycoprotein member of the TNF superfamily (1, 2). Mature rat CD40 Ligand consists of a 22 amino acid (aa) cytoplasmic domain, a transmembrane segment, and an 217 aa extracellular region. The extracellular domain of rat CD40 Ligand shares 75% and 93% amino acid (aa) sequence identity with the human and mouse proteins, respectively. CD40 Ligand is expressed as a homotrimer on platelets and activated T cells and B cells. It is up-regulated following stimulation of basophils, eosinophils, fibroblasts, mast cells, monocytes, natural killer cells, vascular endothelial cells, and smooth muscle cells. CD40 Ligand binds and activates CD40, which is expressed on the surface of B cells, dendritic cells, macrophages, monocytes, platelets, endothelial cells, and epithelial cells (3). The 18 kDa soluble form (aa 112-260) arises from proteolytic processing and retains the ability to bind and activate CD40 (4, 5). Monomeric, dimeric, and trimeric forms of soluble CD40 Ligand bind to oligomeric CD40 on cell membranes (2). CD40 ligation by CD40 Ligand promotes B cell activation and T cell-dependent humoral responses (6, 7). CD40 Ligand dysregulation on T cells and antigen presenting cells contributes to the immune deficiency associated with HIV infection and AIDS (8, 9). It is also implicated in the pathology of multiple cardiovascular diseases including atherosclerosis, atherothrombosis, and restenosis (10, 11).

References:

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