

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human CD40 Ligand/TNFSF5 protein			
	Hemagglutinin tag YPYDVPDYA	GCN4-IZ (Met1-Ile29)	GGGSGGGSGGGS	Human CD40 Ligand (Met113-Leu261) Accession # P29965
	N-terminus			C-terminus

N-terminal Sequence Tyr

Analysis

Predicted Molecular Mass 21.6 kDa

SPECIFICATIONS

SDS-PAGE	22-26 kDa, reducing conditions
Activity	<p>Measured in a cell proliferation assay using enriched human B cells in the presence of IL-4. Spriggs, M.K. <i>et al.</i> (1992) <i>J. Exp. Med.</i> 176:1543. The ED₅₀ for this effect is 0.2-1.2 ng/mL in the presence of 20 ng/mL of Recombinant Human IL-4 (Catalog # 204-IL) and a cross-linking antibody, Mouse Anti-Hemagglutinin/HA Peptide Monoclonal Antibody (Catalog # MAB060).</p> <p>Measured by its ability to induce IL-6 secretion by enriched human B cells. Urashima, M. <i>et al.</i> (1996) <i>Leukemia Res.</i> 20:507. The ED₅₀ for this effect is approximately 0.5 ng/mL in the presence of Recombinant Human IL-4 (Catalog # 204-IL) and a cross-linking antibody, Mouse Anti-Hemagglutinin/HA Peptide Monoclonal Antibody (Catalog # MAB060).</p>
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and EDTA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 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.

BACKGROUND

CD40 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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