

Recombinant Human CD40 Ligand/CD40L

Information

Accession #	P29965
Alternate Names	CD154 antigen; CD154; CD40 antigen ligand; CD40 Ligand; CD40L; CD40-L; gp39; hCD40L;
Source	Human embryonic kidney cell, HEK293-derived human CD40 Ligand/TNFSF5 protein
Protein sequence	Gly116-Leu261
M.Wt	15.8 kDa
Appearance	Solution protein.
Stability & Storage	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Measured in a cell proliferation assay using enriched human B cells in the presence of IL-4. The EC50 for this effect is 0.2-1.2 ng/mL in the presence of 20 ng/mL of Recombinant Human IL-4 and a cross-linking antibody, Mouse Anti-Hemagglutinin/HA Peptide Monoclonal Antibody
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

CD40 Ligand (CD40L), 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].

Reference

- [1]. Zhang, G. (2004) Curr. Opin. Struct. Biol. 14:154.
- [2]. Hehlhans, T. and K. Pfeffer (2005) Immunology 115:1.
- [3]. Quezada, S.A. et al. (2004) Annu. Rev. Immunol. 22:307.
- [4]. Graf, D. et al. (1992) Eur. J. Immunol. 22:3191.
- [5]. Hollenbaugh, D. et al. (1992) EMBO J. 11:4313.
- [6]. Khandekar, S.S. et al. (2001) Protein Expr. Purif. 23:301.
- [7]. Pietravalle, F. et al. (1996) J. Biol. Chem. 271:5965.
- [8]. Garber, E. et al. (1999) J. Biol. Chem. 274:33545.
- [9]. Vakkalanka, R.K. et al. (1999) Arthritis Rheum. 42:871.
- [10]. van Kooten, C. and J. Banchereau (1997) Curr. Opin. Immunol. 9:330.
- [11]. Eissner, G. et al. (2004) Cytokine Growth Factor. Rev. 15:353.
- [12]. Rickert, R.C. et al. (2011) Immunol. Rev. 244:115.
- [13]. Elgueta, R. et al. (2009) Immunol. Rev. 229:152.
- [14]. Kornbluth, R.S. (2000) J. Leukoc. Biol. 68:373.
- [15]. Chougnet, C. (2003) J. Leukoc. Biol. 74:702.
- [16]. Pamukcu, B. et al. (2011) Ann. Med. 43:331.
- [17]. Hassan, G.S. et al. (2012) Immunobiology 217:521.

APExBIO Technology

www.apexbt.com

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com