

CD40L/CD154/TRAP Protein, Rabbit (His)

Cat. No.:	HY-P72122
Synonyms:	CD40LG; CD40L; TNFSF5CD40 ligand; CD40-L; Tumor necrosis factor ligand superfamily member 5; CD antigen CD154; CD40 ligand; membrane form; CD40 ligand; soluble form; sCD40L;
Species:	Rabbit
Source:	E. coli
Accession:	G1SKP7 (M113-L261)
Gene ID:	100358388
Molecular Weight:	Approximately 20.2 kDa

PROPERTIES

AA Sequence	<p> M Q K G D Q D P Q I A A H L I S E A S S K S S S V L Q W A K K G Y Y T M S N T L V T L E N G K Q L K V K R Q G F Y Y I Y A Q V T F C S N Q E P S S Q A P F I A S L C L K S S G G S E R I L L R A A N A R S S S K T C E Q Q S I H L G G V F E L Q A D A S V F V N V T D A S Q V N H G T G F T S F G L L K L </p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm solution of Tris-based buffer, 50% Glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>CD40 Ligand (CD40L; CD154; TRAP) belongs to the tumor necrosis factor (TNF) family, is the ligand for CD40/TNFRSF5, specifically expressed on activated CD4⁺ T-lymphocytes^[1].</p> <p>CD40L is a type II transmembrane protein on B cells triggers important signals for B cell differentiation, maturation, and apoptosis^[4].</p> <p>CD40L acts function by cross-linking on T-cells to generate a costimulatory signal and thus enhances the production of IL4 and IL10 in conjunction with the TCR/CD3 ligation and CD28 costimulation, as well as promoting the production of interferon-γ, and TNF-α^{[1][4]}.</p> <p>CD40L, binding with CD40 on antigen-presenting cells (APC), activates TNFR-associated factor 2- and IKK2-dependent pathways with stimulating I-κB kinase (IKK), increasing NF-κB DNA binding, and p65 nuclear translocation. The activation of</p>
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I- κ B kinase leads to strongly c-Jun N-terminal kinase activation as well as GST-I- κ B and GST-p65 phosphorylation^[2]. CD40L involves in MAPK pathways that strongly repress Bcl-6 with inducing the phosphorylation of Erk1/2, p38 and Jnk1/2 and activating IRF4 mediated by NF- κ B^[3]. CD40L also binds to and signals through several integrins, including α v β 3 and α 5 β 1, which bind to the trimeric interface of CD40L. CD40L plays a major role in immune response and is a major target for inflammation^[5].

REFERENCES

- [1]. Blotta MH, et al. Cross-linking of the CD40 ligand on human CD4+ T lymphocytes generates a costimulatory signal that up-regulates IL-4 synthesis. *J Immunol.* 1996 May 1;156(9):3133-40.
- [2]. Schwabe RF, et al. CD40 activates NF-kappa B and c-Jun N-terminal kinase and enhances chemokine secretion on activated human hepatic stellate cells. *J Immunol.* 2001 Jun 1;166(11):6812-9.
- [3]. Battle A, et al. CD40 and B-cell receptor signalling induce MAPK family members that can either induce or repress Bcl-6 expression. *Mol Immunol.* 2009 May;46(8-9):1727-35.
- [4]. Mikolajczak SA, et al. The modulation of CD40 ligand signaling by transmembrane CD28 splice variant in human T cells. *J Exp Med.* 2004 Apr 5;199(7):1025-31.
- [5]. Takada YK, et al. Soluble CD40L activates soluble and cell-surface integrin α v β 3, α 5 β 1, and α 4 β 1 by binding to the allosteric ligand-binding site (site 2). *J Biol Chem.* 2021 Jan-Jun;296:100399.
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