# CD40L/CD154/TRAP Protein, Human (HEK293, hFc-Flag)

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| **Cat. No.:** | HY-P72028 |
| **Synonyms:** | CD40-L; T-cell antigen Gp39; NF-related activation protein; TRAP; Tumor necrosis factor ligand superfamily member 5; CD154; sCD40L; |
| **Species:** | Human |
| **Source:** | HEK293 |
| **Accession:** | P29965 (M113-L261) |
| **Gene ID:** | 959 |
| **Molecular Weight:** | Approximately 44.5 kDa |

## PROPERTIES

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| **AA Sequence** | M Q K G D Q N P Q I A A H V I S E A S S K T T S V L Q W A E K G Y Y T M S N N L V T L E N G K Q L T V K R Q G L Y Y I Y A Q V T F C S N R E A S S Q A P F I A S L C L K S P G R F E R I L L R A A N T H S S A K P C G Q Q S I H L G G V F E L Q P G A S V F V N V T D P S Q V S H G T G F T S F G L L K L |
| **Biological Activity** | 1.Measured by its binding ability in a functional ELISA. Immobilized CD40L at 2 μg/mL can bind Anti- CD40L Rabbit Monoclonal Antibody, the $EC_{50}$ is 0.5468-3.232 ng/mL.<br>2.Measured by its binding ability in a functional ELISA. Immobilized CD40 at 2 μg/mL can bind CD40L, the $EC_{50}$ is 3.112-3.858 ng/mL.<br>3.Human CD40 protein hFc tag captured on COOH chip can bind Human CD40L protein hFc and Flag tag with an affinity constant < 2.06 nM as detected by LSPR Assay.<br>4. Immobilized Human CD40 Ligand Trimer, His Tag at 1μg/ml (100μl/Well) on the plate. Dose response curve for Human CD40, hFc Tag with the EC50 of 1.29μg/ml determined by ELISA. |
| **Appearance** | Lyophilized powder. |
| **Formulation** | Lyophilized from a 0.2 μm solution of PBS, 6% Trehalose, pH 7.4. |
| **Endotoxin Level** | <1 EU/μg, determined by LAL method. |
| **Reconsititution** | It is not recommended to reconstitute to a concentration less than 100 μg/mL in $ddH_2O$. |
| **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. 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

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| **Background** | 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].<br>CD40L is a type II transmembrane protein on B cells triggers important signals for B cell differentiation, maturation, and apoptosis[4].<br>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].<br>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 I-κB kinase leads to strongly c-Jun N-terminal kinase activation as well as GST-I-κB and GST-p65 phosphorylation[2].<br>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-κB[3].<br>CD40L also binds to and signals through several integrins, including αvβ3 and α5β1, which bind to the trimeric interface of CD40L. CD40L plays a major role in immune response and is a major target for inflammation[5].<br>CD40L is widely found in different animals, while the sequence in Human is highly similar to Rhesus macaque (98.08%), but very different from Rat and Mouse with similarities of 77.31% and 77.69%, respectively. CD40L in Human is cleaved into 2 chains of membrane form (1-261 a.a.) and soluble form (113-261 a.a.), while the soluble form derives from the membrane form by proteolytic processing. Release of soluble CD40L from platelets is partially regulated by GP IIb/IIIa, actin polymerization, and a matrix metalloproteinases (MMP) inhibitor-sensitive pathway[6]. |

## REFERENCES


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