

CD40L/CD154/TRAP Protein, Human (Biotinylated, HEK293, His-Flag)

Cat. No.:	HY-P78102
Synonyms:	CD40L; CD40LG; CD154; TNFSF5; TNFSF5IMD3; CD40LIGM; gp39; HIGM1; T-BAM; TRAP; IGM; IMD3; CD40 Ligand
Species:	Human
Source:	HEK293
Accession:	P29965 (M113-L261)
Gene ID:	959
Molecular Weight:	55-60 kDa

PROPERTIES

Biological Activity	Immobilized Biotinylated Human CD40 Ligand Trimer, His Tag at 2µg/ml (100µl/well) on the streptavidin precoated plate (5 µg/ml). Dose response curve for Human CD40, hFc Tag with the EC ₅₀ of 0.61µg/ml determined by ELISA.
Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

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].

CD40L is a type II transmembrane protein on B cells triggers important signals for B cell differentiation, maturation, and apoptosis^[4].

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]}.

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].

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].

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]. 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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