

PRODUCT INFORMATION



Soluble CD40 Ligand (human, recombinant; His-tagged)

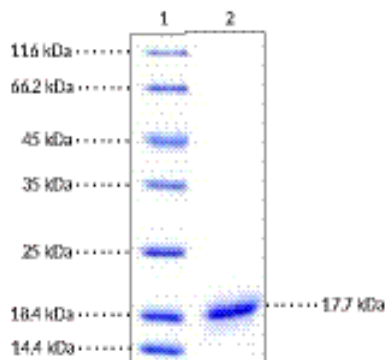
Item No. 32047

Overview and Properties

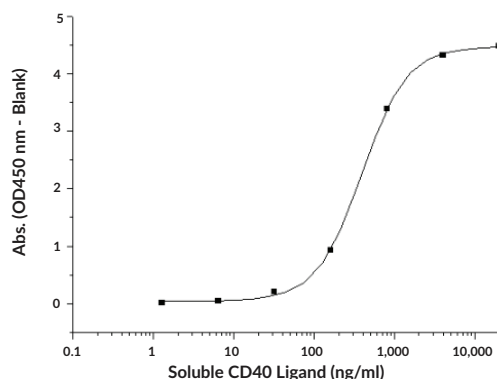
Synonyms:	CD40L, CD154, T-B Cell-activating Molecule, T Cell Antigen Gp39, TNF-related Activation Protein, TNF Superfamily Member 5
Source:	Active recombinant human C-terminal His-tagged CD40 ligand expressed in <i>E. coli</i>
Amino Acids:	108-261
Uniprot No.:	P29965
Molecular Weight:	17.7 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4, with 10% glycerol
Bioactivity:	See figures for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

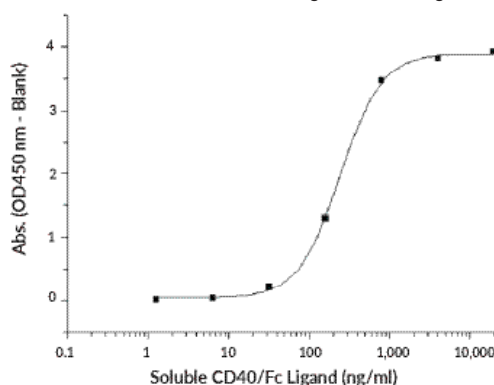
Images



SDS-PAGE Analysis of Soluble CD40 Ligand.
This recombinant human CD40L consists of 161 amino acids and has a calculated molecular mass of 17.7 kDa. It migrates as an 18 kDa band in SDS-PAGE due to glycosylation.



Measured by its binding ability in a functional ELISA.
Immobilized human CD40L at 10 µg/ml (100 µl/well) can bind human CD40 with a linear range of 15.6-500 ng/ml.



Measured by its binding ability in a functional ELISA.
Immobilized human CD40L at 10 µg/ml (100 µl/well) can bind human CD40/Fc with a linear range of 7.8-125 ng/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

CD40 ligand (CD40L) is a type II transmembrane protein and member of the TNF superfamily encoded by *CD40LG* in humans.¹ It is expressed primarily by activated T cells, as well as activated B cells and platelets and, under inflammatory conditions, can be induced in natural killer (NK) cells, mast cells, basophils, and monocytes. CD40L trimerizes to engage its receptor, CD40, on various cells, including B cells, dendritic cells, monocytes, platelets, macrophages, endothelial cells, and myoblasts, to induce cell type-specific signaling and activities. Soluble CD40L (sCD40L) is produced by proteolytic cleavage of CD40L at the cell surface and is found in the circulation.^{2,3} sCD40L retains its ability to trimerize and bind to CD40, indicating CD40L can act as a cytokine.² Exogenous administration of sCD40L increases blood brain barrier (BBB) permeability and increases disease severity in a mouse model of experimental autoimmune encephalomyelitis (EAE).⁴ sCD40L enhances collagen-induced aggregation of isolated human platelets and exacerbates thrombus formation in wild-type, but not *CD40*^{-/-}, mice.⁵ Serum levels of sCD40L are positively correlated with the albumin quotient, a marker of BBB breakdown, in patients with multiple sclerosis.⁴ Cayman's Soluble CD40 Ligand (human, recombinant; His-tagged) protein can be used for ELISA. This protein consists of 161 amino acids and has a calculated molecular weight of 17.7 kDa.

References

1. Elgueta, R., Benson, M.J., de Vries, V.C., *et al.* Molecular mechanism and function of CD40/CD40L engagement in the immune system. *Immunol. Rev.* **229**(1), 152-172 (2009).
2. van Kooten, C. and Banchereau, J. CD40-CD40 Ligand. *J. Leukoc. Biol.* **67**(1), 2-17 (2000).
3. Doublier, S., Zennaro, C., Musante, L., *et al.* Soluble CD40 ligand directly alters glomerular permeability and may act as a circulating permeability factor in FSGS. *PLoS One* **12**(11), e0188045 (2017).
4. Masuda, H., Mori, M., Umehara, K., *et al.* Soluble CD40 ligand disrupts the blood-brain barrier and exacerbates inflammation in experimental autoimmune encephalomyelitis. *J. Neuroimmunol.* **316**, 117-120 (2018).
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CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM