

PRODUCT INFORMATION



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

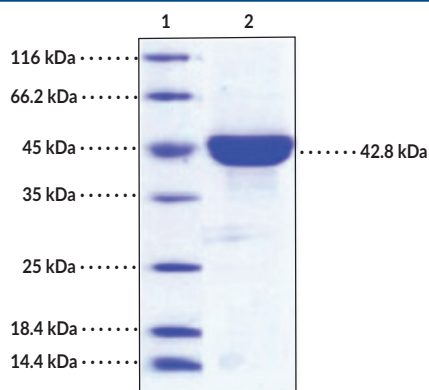
Item No. 32046

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 N-terminal human IgG1 Fc-tagged CD40 ligand expressed in HEK293 cells
Amino Acids:	113-261
Uniprot No.:	P29965
Molecular Weight:	42.8 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	<1.0 EU/μg, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

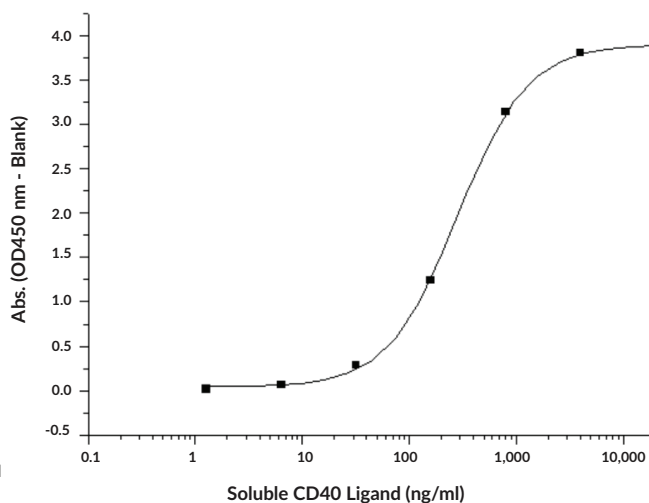
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Soluble CD40 Ligand

SDS-PAGE Analysis of Soluble CD40 Ligand. This reduced monomer consists of 386 amino acids and has a predicted molecular mass of 42.8 kDa. The apparent molecular mass of soluble CD40 ligand (human, recombinant; Fc-tagged) is approximately 45 kDa in SDS-PAGE due to glycosylation.



Measured by its binding ability in a functional ELISA. Immobilized human CD40 at 2 μg/ml (100 μl/well) can bind human CD40L Fc chimera with a linear range of 1.28-32 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
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 06/09/2020

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

PRODUCT INFORMATION



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; Fc-tagged) protein can be used for ELISA. This protein is a disulfide-linked homodimer. The reduced monomer, comprised of CD40L (amino acids 113-261) fused to human IgG1 Fc at its N-terminus, consists of 386 amino acids and has a calculated molecular weight of 42.8 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).
5. Yacoub, D., Hachem, A., Théorêt, J.-F., *et al.* Enhanced levels of soluble CD40 ligand exacerbate platelet aggregation and thrombus formation through a CD40-dependent tumor necrosis factor receptor-associated factor-2/Rac1/p38 mitogen-activated protein kinase signaling pathway. *Arterioscler. Thromb. Vasc. Biol.* **30**(12), 2424-2433 (2010).

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