PRODUCT INFORMATION

TNFRSF7/CD27 Extracellular Domain (human, recombinant)

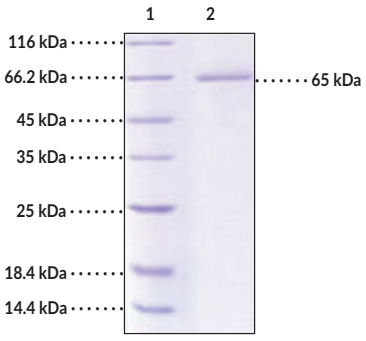
Item No. 31828

Overview and Properties

Synonyms:	TNFRSF7, Tp55, Tumor Necrosis Factor Receptor Superfamily Receptor 7
Source:	Active recombinant C-terminal human IgG1 Fc-His-tagged CD27 expressed in HEK293 cells
Amino Acids:	21-192
Uniprot No.:	P26842
Molecular Weight:	47.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% 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

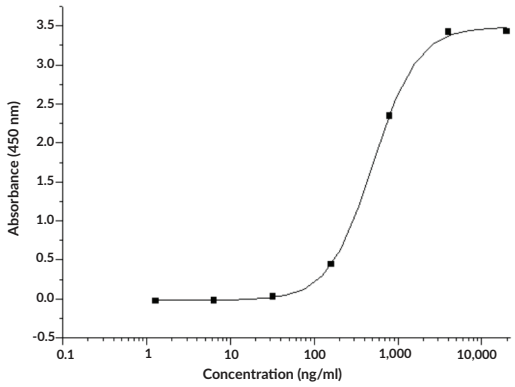
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: CD27 Extracellular Domain

SDS-PAGE Analysis of CD27 Extracellular Domain. This protein has a calculated molecular weight of 47.2 kDa. It has an apparent molecular weight of approximately 65 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Binding Ability of CD27 Extracellular Domain. Immobilized CD27 Extracellular Domain at 2 µg/ml (100 µl/well) can bind biotinylated human CD70 with a linear range of 0.39-12.5 ng/ml.

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

CD27, also known as tumor necrosis factor receptor superfamily receptor 7 (TNFRSF7), is a type I transmembrane glycoprotein with roles in T cell-mediated immunity.[1,2] It is comprised of an extracellular domain containing three cysteine-rich domains (CRDs), a transmembrane domain, and a short cytoplasmic domain that facilitates intracellular signaling.[1] CD27 is expressed on a broad range of lymphocytes, including natural killer (NK), B, and T cells, with T cell CD27 expression increasing upon T cell receptor stimulation.[3] Binding of homotrimeric CD70 to CD27 on antigen-primed T cells induces NF-κB and MAPK signaling through TNF receptor-associated factors (TRAFs) and, when the T cell is stimulated by other factors, induces PI3K signaling to induce the co-stimulation and expansion of naïve $CD4^+$ and $CD8^+$ T cells.[4,5] Knockout of *CD27* reduces thymic development of regulatory T cell (Treg) precursors and enhances apoptosis of mature Tregs in mice. Levels of CD27-expressing plasma cells are increased in the periphery and positively correlate with the disease activity index and serum levels of anti-dsDNA autoantibodies in patients with systemic lupus erythematosus (SLE).[6] Cayman's TNFRSF7/CD27 Extracellular Domain (human, recombinant) protein can be used for binding assay applications. This protein is a disulfide-linked homodimer. The reduced monomer, comprised of CD27 (amino acids 21-192) fused to His-tagged human IgG1 Fc at its C-terminus, consists of 420 amino acids, has a calculated molecular weight of 47.2 kDa, and a predicted N-terminus of Thr21 after signal peptide cleavage. As a result of glycosylation, the monomer migrates at approximately 65 kDa by SDS-PAGE under reducing conditions.

References

1. Buchan, S.L., Rogel, A., and Al-Shamkhani, A. The immunobiology of CD27 and OX40 and their potential as targets for cancer immunotherapy. *Blood* **131(1)**, 39-48 (2018).
2. Grant, E.J., Nüssing, S., Sant, S., *et al*. The role of CD27 in anti-viral T-cell immunity. *Curr. Opin. Virol.* **22**, 77-88 (2017).
3. Hendriks, J., Gravestein, L.A., Tesselaar, K., *et al*. CD27 is required for generation and long-term maintenance of T cell immunity. *Nat. Immunol.* **1(5)**, 433-440 (2000).
4. Wyzgol, A., Müller, N., Fick, A., *et al*. Trimer stabilization, oligomerization, and antibody-mediated cell surface immobilization improve the activity of soluble trimers of CD27L, CD40L, 41BBL, and glucocorticoid-induced TNF receptor ligand. *J. Immunol.* **183(3)**, 1851-1861 (2009).
5. Wajant, H. Therapeutic targeting of CD70 and CD27. *Expert Opin. Ther. Targets* **20(8)**, 959-973 (2016).
6. Han, B.K., Olsen, N.J., and Bottaro, A. The CD27-CD70 pathway and pathogenesis of autoimmune disease. *Semin. Arthritis Rheum.* **45(4)**, 496-501 (2016).

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