PRODUCT INFORMATION

CD226 Extracellular Domain (mouse, recombinant; His-tagged)

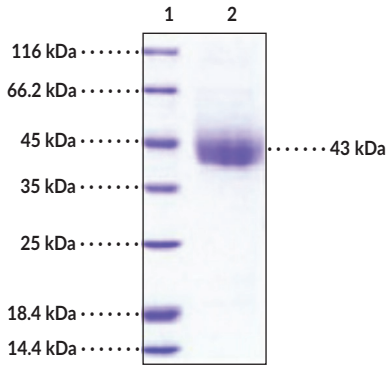
Item No. 32072

Overview and Properties

Synonyms:	Cluster of Differentiation 226, DNAX Accessory Molecule-1, DNAM-1, PTA1, TLISA1
Source:	Active recombinant mouse C-terminal His-tagged CD226 expressed in HEK293 cells
Amino Acids:	19-254
Uniprot No.:	Q8K4F0
Molecular Weight:	28.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥97% 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 figure for details

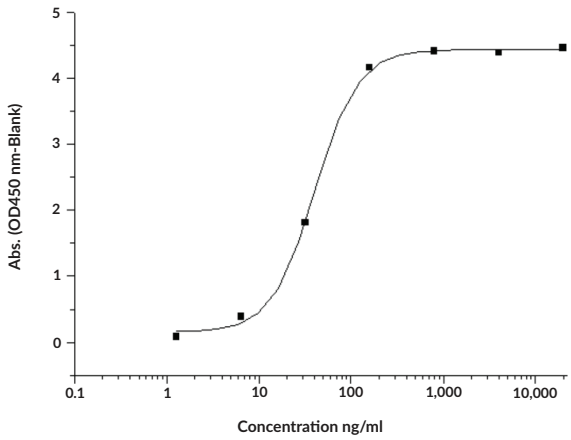
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: CD226 Extracellular Domain

SDS-PAGE Analysis of CD226 Extracellular Domain. This protein has a calculated molecular weight of 28.2 kDa. It has an apparent molecular weight of 43 kDa in SDS-PAGE under reducing conditions due to glycosylation.



CD226 Extracellular Domain Binding in a Functional ELISA. Immobilized mouse CD226 Extracellular Domain at 2 µg/ml (100 µl/well) can bind mouse Tage4 with a linear range of 6.4-160 ng/ml.

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Description

CD226, also known as DNAM-1, is a type I transmembrane glycoprotein and a member of the immunoglobulin superfamily.[1] It is composed of an N-terminal signal peptide, an extracellular domain containing two immunoglobulin-like (Ig-like) domains and two paired cysteine residues, a transmembrane domain, and a C-terminal cytoplasmic region containing at least two phosphorylation sites important for ligand binding.[1,2] It is expressed on certain T cells, natural killer (NK) cells, monocytes, and B cells and mediates cell adhesion between these and other immune cells.[1] CD226 is an adhesion protein that binds to its ligands, PVR/CD155 or nectin-2/CD112, expressed on immature dendritic cells, as well as infected or transformed cells, to induce NK-mediated killing and cell lysis.[2] CD226 also associates with lymphocyte function-associated antigen 1 (LFA1) on activated NK cells, which is essential for its signaling.[3] A variant of Cd226 generated through alternative splicing in mice lacks the first Ig-like domain and does not interact with CD155.[2] In addition, mouse Cd226 interacts with mouse, but not human, CD155.[4] CD226 is involved in immunological synapse formation and acts as a co-stimulatory molecule on NK cells to promote antigen presenting cell-induced cytokine release that, in turn, induces IFN-γ secretion from NK cells.[2] It is also involved in NK cell-mediated immunosurveillance, reducing tumor growth in mouse models of cancer while *Cd226*$^{-/-}$ mice are more susceptible to NK cell-dependent tumor initiation.[2,5] A glycine-to-serine mutation at position 307 of CD226 is associated with autoimmune diseases, such as rheumatoid arthritis, systemic lupus erythematosus (SLE), and multiple sclerosis.[2,6] Cayman's CD226 Extracellular Domain (mouse, recombinant; His-tagged) protein can be used for binding assay and ELISA applications. This protein consists of 247 amino acids, has a calculated molecular weight of 28.2 kDa, and a predicted N-terminus of Glu19 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 43 kDa due to glycosylation.

References

1. Shibuya, A., Campbell, D., Hannum, C., *et al.* DNAM-1, a novel adhesion molecule involved in the cytolytic function of T lymphocytes. *Immunity* **4(6)**, 573-581 (1996).
2. Martinet, L. and Smyth, M.J. Balancing natural killer cell activation through paired receptors. *Nat. Rev. Immunol.* **15**, 243-254 (2015).
3. Shibuya, K., Lanier, L.L., Phillips, J.H., *et al.* Physical and functional association of LFA-1 with DNAM-1 adhesion molecule. *Immunity* **11(5)**, 615-623 (1999).
4. Stanietsky, N., Rovis, T.L., Glasner, A., *et al.* Mouse TIGIT inhibits NK-cell cytotoxicity upon interaction with PVR. *Eur. J. Immunol.* **43(8)**, 2138-2150 (2013).
5. Lakshmikanth, T., Burke, S.E., Ali, T.H., *et al.* NCRs and DNAM-1 mediate NK cell recognition and lysis of human and mouse melanoma cell lines in vitro and in vivo. *J. Clin. Invest.* **119(5)**, 1251-1263 (2009).
6. Hafler, J.P., Maier, L.M., Cooper, J.D., *et al.* CD226 Gly307Ser association with multiple autoimmune diseases. *Genes Immun.* **10(1)**, 5-10 (2008).

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