

# PRODUCT INFORMATION



## CD226 Extracellular Domain (human, recombinant)

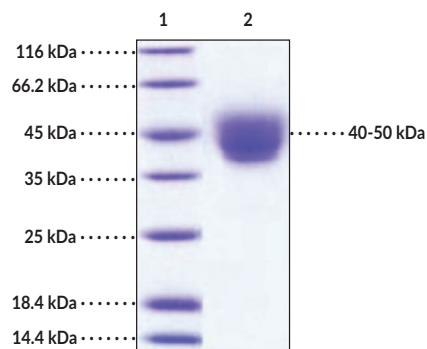
Item No. 31837

### Overview and Properties

**Synonyms:** Cluster of Differentiation 226, DNAX Accessory Molecule-1, DNAM-1, PTA1, TLISA1  
**Source:** Active recombinant human C-terminal His-tagged CD226 expressed in HEK293 cells  
**Amino Acids:** 19-247  
**Uniprot No.:** Q15762  
**Molecular Weight:** 27.6 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

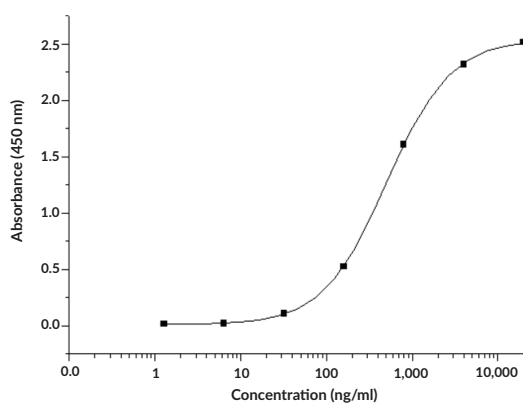
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: CD226 Extracellular Domain

**SDS-PAGE Analysis of CD226 Extracellular Domain.** This protein has a calculated molecular weight of 27.6 kDa. It has an apparent molecular weight of approximately 40-50 kDa by SDS-PAGE under reducing conditions due to glycosylation.



**CD226 Extracellular Domain Binding in a Binding Assay.** Immobilized human CD226 Extracellular Domain at 2 μg/ml (100 μl/well) can bind human CD112 with a linear range of 6.4-800 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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## Description

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CD226, also known as DNAM-1, is a type I transmembrane glycoprotein and a member of the immunoglobulin superfamily.<sup>1</sup> 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.<sup>1,2</sup> 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.<sup>1</sup> 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.<sup>2</sup> CD226 also associates with lymphocyte function-associated antigen 1 (LFA1) on activated NK cells, which is essential for its signaling.<sup>3</sup> 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- $\gamma$  secretion from NK cells.<sup>2</sup> It is also involved in NK cell-mediated immunosurveillance, reducing tumor growth in mouse models of cancer while *Cd226*<sup>-/-</sup> mice are more susceptible to NK cell-dependent tumor initiation.<sup>2,4</sup> 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.<sup>2,5</sup> Cayman's CD226 Extracellular Domain (human, recombinant) protein can be used for binding assay applications. This protein consists of 240 amino acids, has a calculated molecular weight of 27.6 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 approximately 40 to 50 kDa due to glycosylation.

## References

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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(4)**, 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. 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).
5. 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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