

Active Recombinant Human PDCD1 protein, His/Avi-tagged, Biotinylated

Cat. No. PDCD1-051H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Biotinylated Recombinant Human PDCD1(Leu25-Thr168) protein, fused to His/Avi tag at the C-terminus, was expressed in HEK293 cells .
Species	Human
Source	HEK293
ProteinLength	Leu25-Thr168
Description	Programmed Death-1 receptor (PDCD1), also known as CD279, is type I transmembrane protein belonging to the CD28 family of immune regulatory receptors (1). Other members of this family include CD28, CTLA-4, ICOS, and BTLA (2-5). Mature mouse PDCD1 consists of a 149 amino acid (aa) extracellular region (ECD) with one immunoglobulin-like V-type domain, a 21 aa transmembrane domain, and a 98 aa cytoplasmic region. The mouse PDCD1 ECD shares 65% aa sequence identity with the human PD-1 ECD. The cytoplasmic tail contains two tyrosine residues that form the immunoreceptor tyrosine-based inhibitory motif (ITIM) and immunoreceptor tyrosine-based switch motif (ITSM) that are important for mediating PDCD1 signaling. PDCD1 acts as a monomeric receptor and interacts in a 1:1 stoichiometric ratio with its ligands PD-L1 (B7-H1) and PD-L2 (B7-DC) (6, 7). PD-1 is expressed on activated T cells, B cells, monocytes, and dendritic cells while PD-L1 expression is constitutive on the same cells and also on nonhematopoietic cells such as lung endothelial cells and hepatocytes (8, 9). Ligation of PD-L1 with PD-1 induces co-inhibitory signals on T

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cells promoting their apoptosis, anergy, and functional exhaustion (10). Thus, the PD-1:PD-L1 interaction is a key regulator of the threshold of immune response and peripheral immune tolerance (11). Finally, blockade of the PD-1: PD-L1 interaction by either antibodies or genetic manipulation accelerates tumor eradication and shows potential for improving cancer immunotherapy (12, 13).

Predicted N Terminal	Leu25
Form	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.
Bio-activity	Measured by its binding ability in a functional ELISA. When 500 ng/mL of Biotinylated Recombinant Human PDCD1 His-tag Avi-tag protein is immobilized, it binds to Recombinant Human PDCDL1 Fc Chimera with an ED50 of 1.2-7.2 ng/mL.
Molecular Mass	28-45 kDa, reducing conditions
Endotoxin	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Applications	Bioactivity
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 °C as supplied. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 3 months, ≤ -20 °C under sterile conditions after reconstitution.
Reconstitution	Reconstitute at 200 µg/mL in PBS.

Conjugation Biotin

GENE INFORMATION

Gene Name PDCD1 programmed cell death 1 [Homo sapiens]

Official Symbol PDCD1

Synonyms PDCD1; programmed cell death 1; programmed cell death protein 1; CD279; PD1; protein PD-1; PD-1; SLEB2; hPD-1; hPD-I;

Gene ID 5133

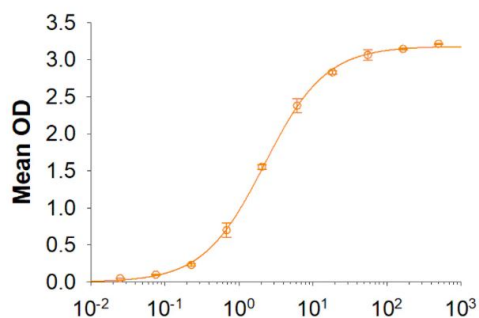
mRNA Refseq NM_005018

Protein Refseq NP_005009

MIM 600244

UniProt ID Q15116

Binding Activity

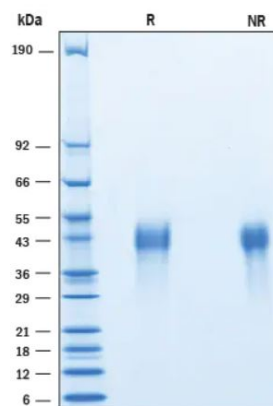


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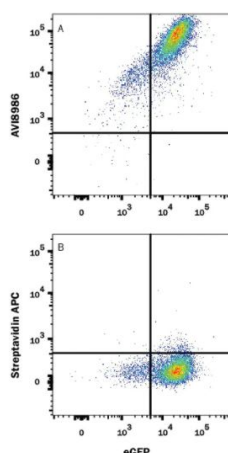
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SDS-PAGE



2 µg/lane Protein was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining.

Flow Cytometry



In a functional flow cytometry test, (A) Recombinant Human PDCCD1 His-tag Avi-tag Protein binds to HEK293 human embryonic kidney cell line transfected with

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recombinant human PDCDL1 and EGFP. Ligand binding was detected by staining cells with APC-conjugated Streptavidin, which does not stain the cells in the absence of recombinant protein (B).

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