

Recombinant Human PDCD1 protein, Fc-tagged, low endotoxin (HPLC-verified)

Cat. No. PDCD1-821H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant Human PDCD1 protein (Leu25-Gln167)(low endotoxin, HPLC-verified), fused to human IgG1 Fc tag at C-terminus, was expressed in human 293 cells (HEK293).
Species	Human
Source	HEK293
ProteinLength	143
Description	Programmed cell death protein 1 (PD-1) is also known as CD279 and PDCD1, is a type I membrane protein and is a member of the extended CD28/CTLA-4 family of T cell regulators. PDCD1 is expressed on the surface of activated T cells, B cells, macrophages, myeloid cells and a subset of thymocytes. PD-1 has two ligands, PD-L1 and PD-L2, which are members of the B7 family. PD-L1 is expressed on almost all murine tumor cell lines, including PA1 myeloma, P815 mastocytoma, and B16 melanoma upon treatment with IFN-γ. PD-L2 expression is more restricted and is expressed mainly by DCs and a few tumor lines. PD1 inhibits the T-cell proliferation and production of related cytokines including IL-1, IL-4, IL-10 and IFN-γ by suppressing the activation and transduction of PI3K/AKT pathway. In addition, coligation of PD1 inhibits BCR-mediated signal by dephosphorylating key signal transducer. In vitro, treatment of anti-CD3 stimulated T cells with PD-L1-Ig results in reduced T cell proliferation and IFN-γ secretion. Monoclonal antibodies targeting PD-

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	1 that boost the immune system are being developed for the treatment of cancer.
Form	Lyophilized from 0.22 um filtered solution in PBS, pH7.4, 10% trehalose.
Molecular Mass	The protein has a calculated MW of 42.6 kDa. The protein migrates as 56-66 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.
Endotoxin	Less than 0.1 EU per ug by the LAL method.
Purity	>95% as determined by SDS-PAGE.
Storage	For long term storage, the product should be stored at lyophilized state at -20 centigrade or lower. Please avoid repeated freeze-thaw cycles. This product is stable after storage at: -20 centigrade to -70 centigrade for 12 months in lyophilized state; -70 centigrade for 3 months under sterile conditions after reconstitution.
Reconstitution	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.2 ug/ul. Centrifuge the vial at 4°C before opening to recover the entire contents.
GENE INFORMATION	
Gene Name	PDCD1
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

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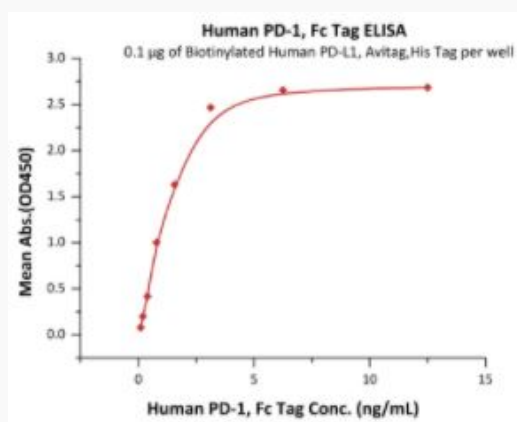
mRNA Refseq [NM_005018](#)

Protein Refseq [NP_005009](#)

MIM [600244](#)

UniProt ID [Q15116](#)

Bioactivity-ELISA of PDCD1-821H



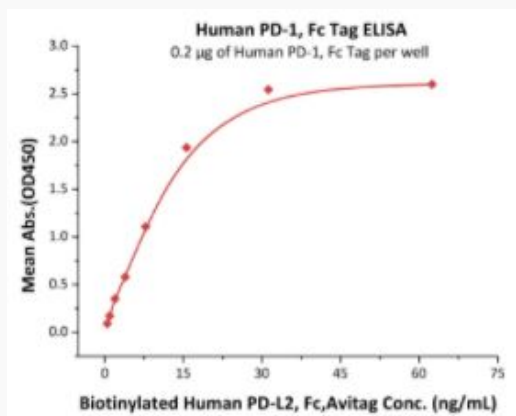
Immobilized Biotinylated Human PD-L1, Avitag, His Tag (recommended for biopanning) at 1 µg/mL (100 µL/well) on streptavidin precoated (0.2 µg/well) plate, can bind Human PD-1, Fc Tag, low endotoxin (HPLC-verified) with a linear range of 0.1-3 ng/mL (QC tested).

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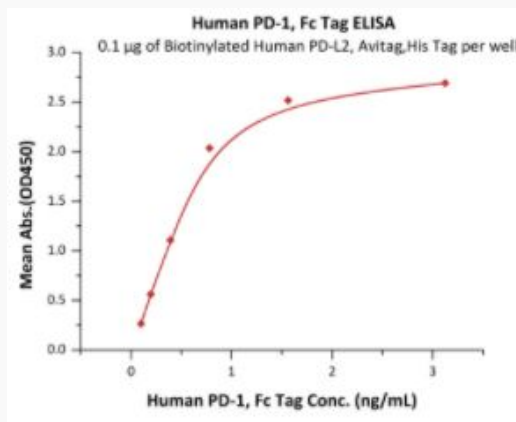
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Bioactivity-ELISA of PDCD1-821H



Immobilized Human PD-1, Fc Tag, low endotoxin (HPLC-verified) at 2 µg/mL (100 µL/well) can bind Biotinylated Human PD-L2, Fc,Avitag with a linear range of 0.5-16 ng/mL (Routinely tested).

Bioactivity-ELISA of PDCD1-821H



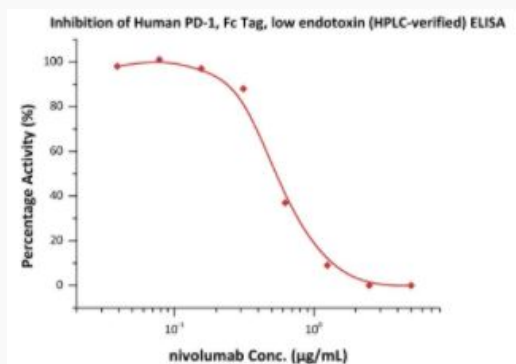
Immobilized Biotinylated Human PD-L2, Avitag,His Tag (recommended for biopanning) at 1 µg/mL (100 µL/well) on streptavidin precoated (0.2 µg/well) plate, can bind Human PD-1, Fc Tag, low endotoxin (HPLC-verified) with a linear range of 0.1-1 ng/mL (Routinely tested).

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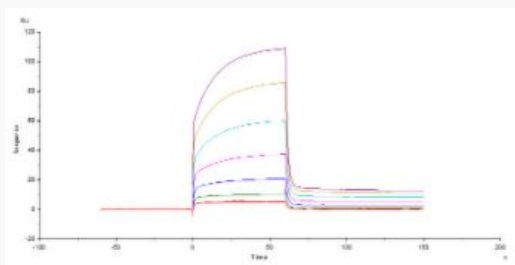
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Bioactivity-ELISA of PDCD1-821H



Serial dilutions of nivolumab were added into Human PD-1, Fc Tag, low endotoxin (HPLC-verified): Biotinylated Human PD-L1, Fc,Avitag,His Tag binding reactions. The half maximal inhibitory concentration (IC₅₀) is 0.5381 µg/mL (Routinely tested).

Bioactivity-SPR of PDCD1-821H



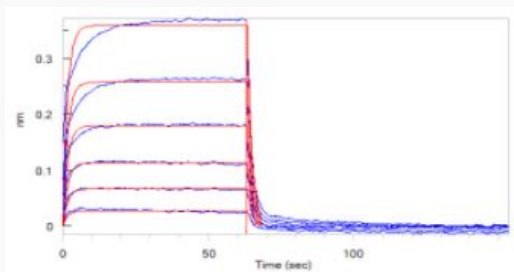
Human PD-1, Fc Tag, low endotoxin (HPLC-verified) captured on CM5 chip via anti-human IgG Fc antibody, can bind Human PD-L1, His Tag (HPLC-verified) with an affinity constant of 3.6 µM as determined in a SPR assay (Routinely tested).

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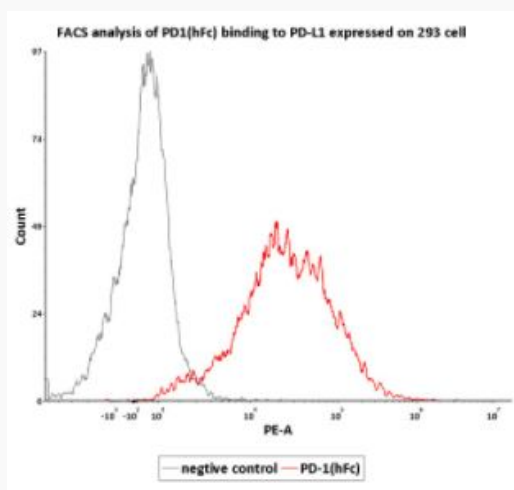
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Bioactivity-BLI of PDCD1-821H



Loaded Human PD-1, Fc Tag, low endotoxin (HPLC-verified) on ProteinA Biosensor, can bind Human PD-L1, His Tag (HPLC & BLI verified) with an affinity constant of 5.3 μM as determined in BLI assay (Routinely tested).

Bioactivity-FACS of PDCD1-821H



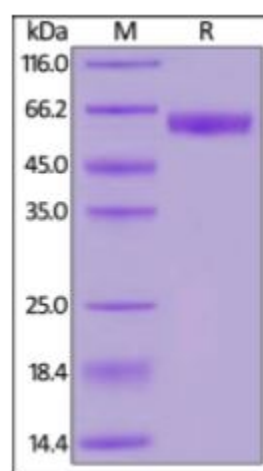
Flow Cytometry assay shows that Human PD-1, Fc Tag, low endotoxin (HPLC-verified) can bind to 293 cell overexpressing human PD-L1. The concentration of PD-1 used is 1 $\mu\text{g}/\text{mL}$ (Routinely tested).

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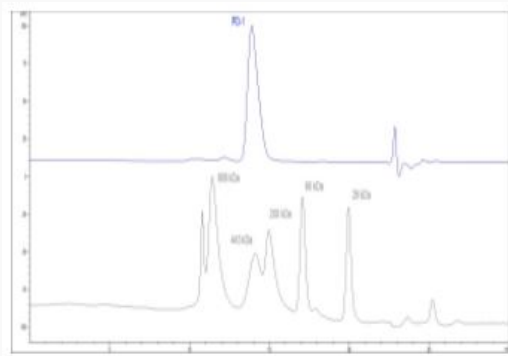
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SDS-PAGE of PDCD1-821H



Human PD-1, Fc Tag, low endotoxin (HPLC-verified) on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-HPLC of PDCD1-821H



The purity of Human PD-1, Fc Tag, low endotoxin (HPLC-verified) was greater than 90% as determined by SEC-HPLC.

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