Human PD-1 / PDCD1 Protein, Fc Tag, low endotoxin (MALS Verified)

Catalog # PD1-H5257

Synonym

PDCD1,PD1,CD279,SLEB2

Source

Human PD-1 Protein, Fc Tag(PD1-H5257) is expressed from human 293 cells (HEK293). It contains AA Leu 25 - Gln 167 (Accession # NP_005009.2).
Predicted N-terminus: Leu 25

Molecular Characterization

PD-1(Leu 25 - Gln 167)	Fc(Pro 100 - Lys 330)
NP_005009.2	P01857

This protein carries a human IgG1 Fc tag at the C-terminus

The protein has a calculated MW of 42.1 kDa. The protein migrates as 56-66 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 0.1 EU per μg by the LAL method.

Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

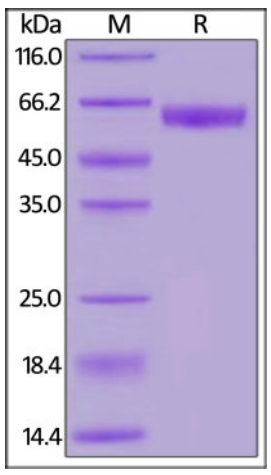
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

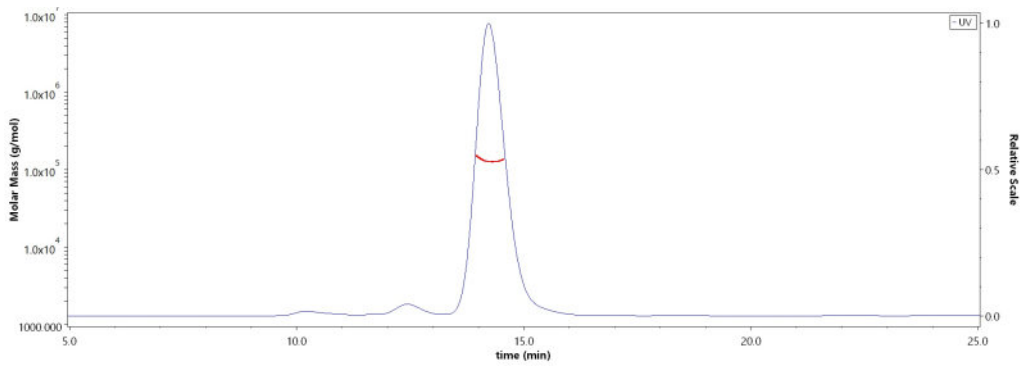
- -20°C to -70°C for 24 months in lyophilized state;
- -70°C for 24 months under sterile conditions after reconstitution.

SDS-PAGE



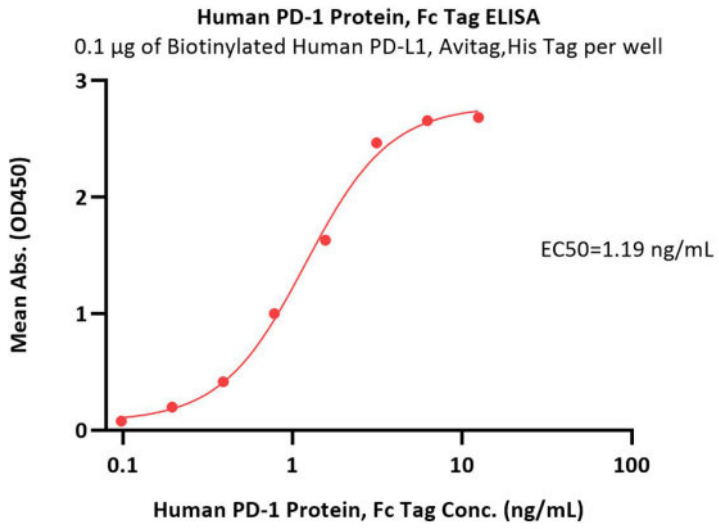
Human PD-1 Protein, Fc Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS



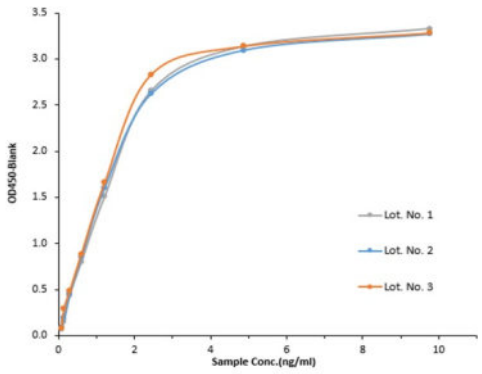
The purity of Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) is more than 90% and the molecular weight of this protein is around 105-145 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA



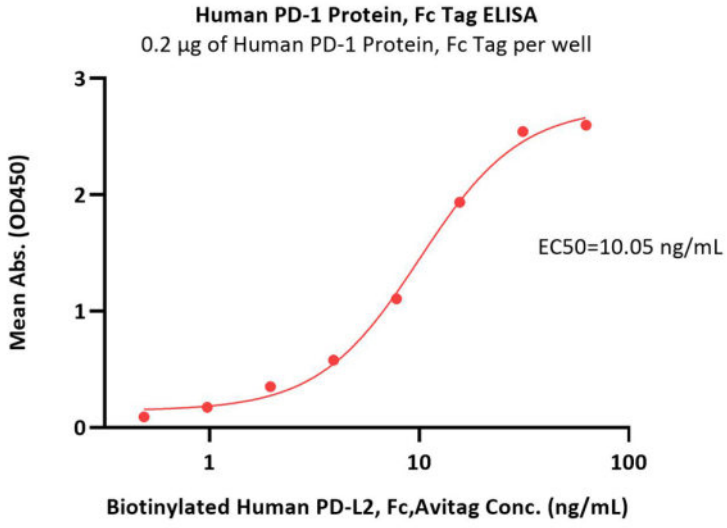
Immobilized Biotinylated Human PD-L1, Avitag,His Tag (Cat. No. PD1-H82E5) at 1 μg/mL (100 μL/well) on streptavidin precoated (0.5 μg/well) plate, can bind Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) with a linear range of 0.1-3 ng/mL (QC tested).

Batch consistency

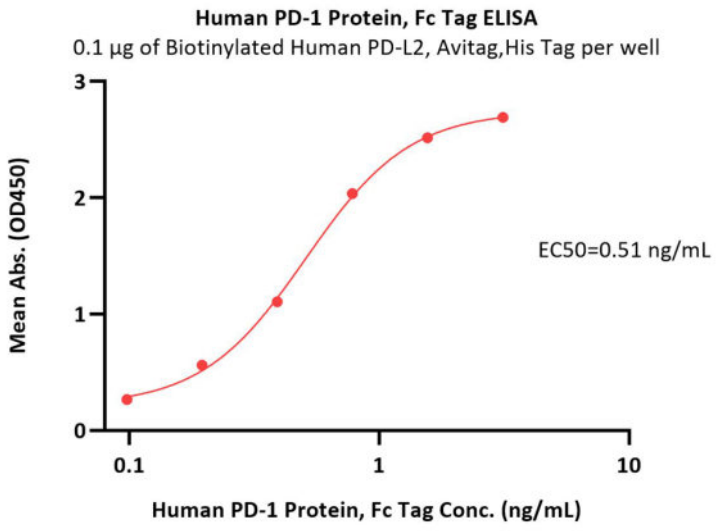


Lot. No.	EC50(μg/mL)
Lot. No. 1	0.0013
Lot. No. 2	0.0013
Lot. No. 3	0.0012

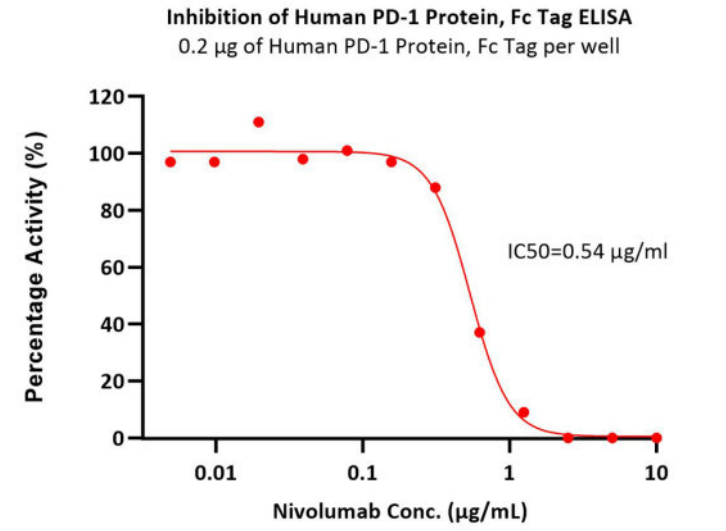
Report



Immobilized Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) at 2 μg/mL (100 μL/well) can bind Biotinylated Human PD-L2, Fc,Avitag (Cat. No. PD2-H82F6) with a linear range of 0.5-16 ng/mL (Routinely tested).

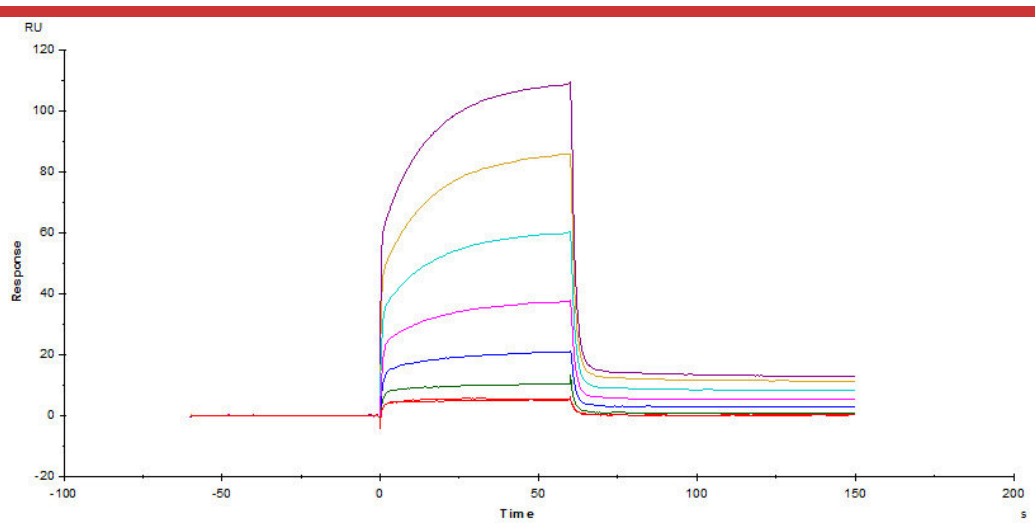


Immobilized Biotinylated Human PD-L2, Avitag,His Tag (Cat. No. PD2-H82E8) at 1 μg/mL (100 μL/well) on streptavidin precoated (0.2 μg/well) plate, can bind Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) with a linear range of 0.1-1 ng/mL (Routinely tested).



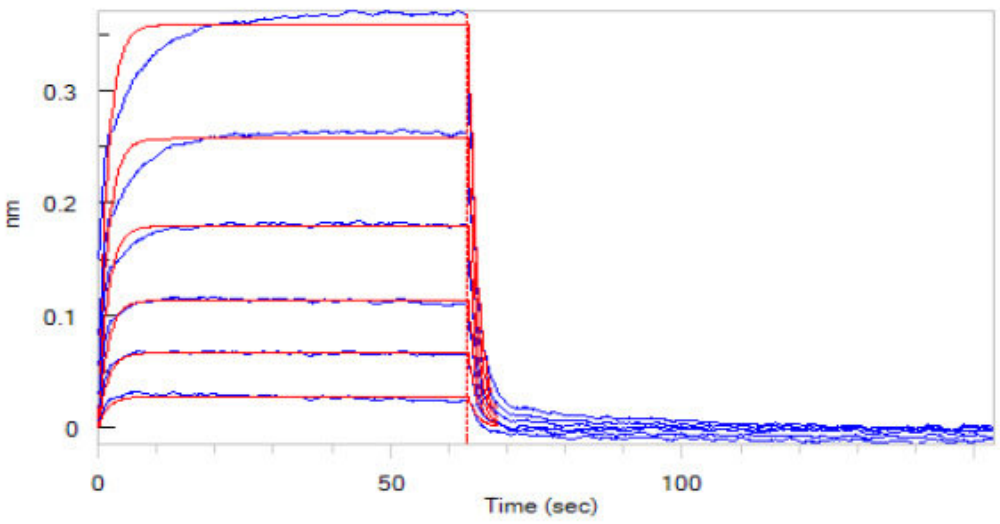
Serial dilutions of nivolumab were added into Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257): Biotinylated Human PD-L1, Fc,Avitag,His Tag (Cat. No. PD1-H82F3) binding reactions. The half maximal inhibitory concentration (IC50) is 0.5381 μg/mL (Routinely tested).

Bioactivity-SPR

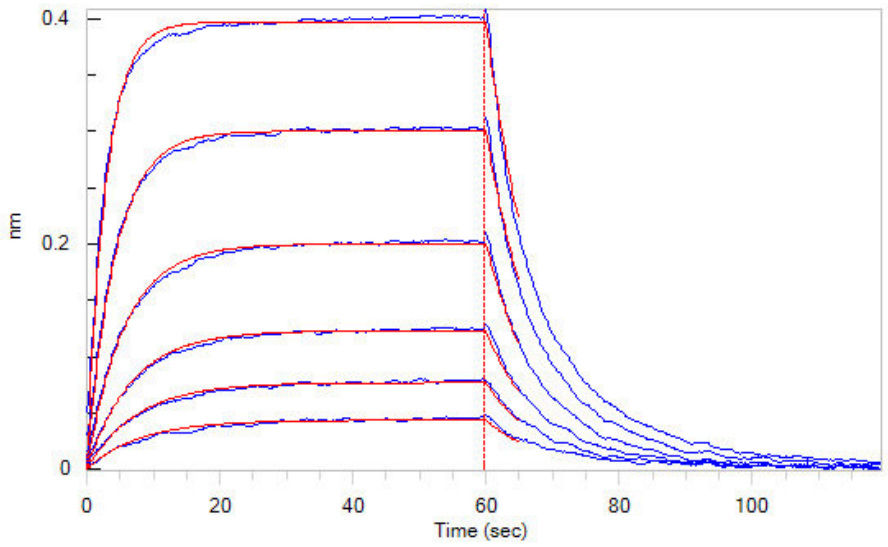


Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) captured on CM5 chip via anti-human IgG Fc antibody, can bind Human PD-L1, His Tag (Cat. No. PD1-H5229) with an affinity constant of 3.6 μM as determined in a SPR assay (Biacore T200) (Routinely tested).

Bioactivity-BLI

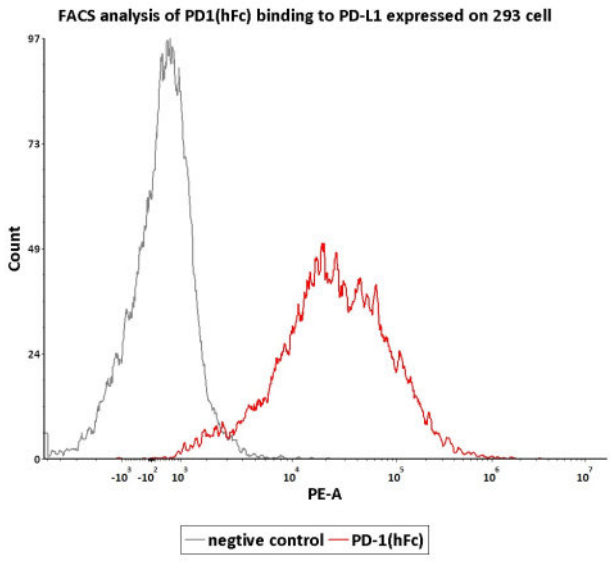


Loaded Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) on ProteinA Biosensor, can bind Human PD-L1, His Tag (Cat. No. PD1-H5229) with an affinity constant of 5.3 μM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) on Protein A Biosensor, can bind Human PD-L2 Protein, His Tag (Cat. No. PD2-H5220) with an affinity constant of 0.45 μM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Bioactivity-FACS



Flow Cytometry assay shows that Human PD-1 Protein, Fc Tag (Cat. No. PD1-H5257) can bind to 293 cell overexpressing human PD-L1. The concentration

of PD-1 used is 1 μg/mL (Routinely tested).

Background

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-mediating 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-1 that boost the immune system are being developed for the treatment of cancer.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.