



**Synonym**

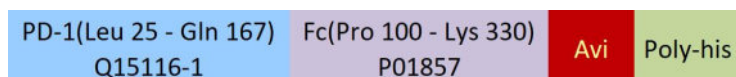
PDCD1,PD1,CD279,SLEB2

**Source**

Biotinylated Human PD-1, Fc,Avitag,His Tag(PD1-H82F4) is expressed from human 293 cells (HEK293). It contains AA Leu 25 - Gln 167 (Accession # [Q15116-1](#)).

Predicted N-terminus: Leu 25

**Molecular Characterization**



This protein carries a human IgG1 Fc fragment at the C-terminus, followed by a polyhistidine tag. The Avi tag (Avitag™) is inserted in-between the Fc tag and polyhistidine tag.

The protein has a calculated MW of 45.5 kDa. The protein migrates as 55-65 kDa under reducing (R) condition, and 115-130 kDa under non-reducing (NR) condition (SDS-PAGE) due to glycosylation.

**Labeling**

*Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.*

**Protein Ratio**

Passed as determined by the HABA assay / binding ELISA.

**Endotoxin**

Less than 1.0 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**

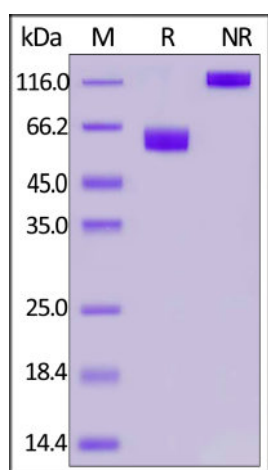
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

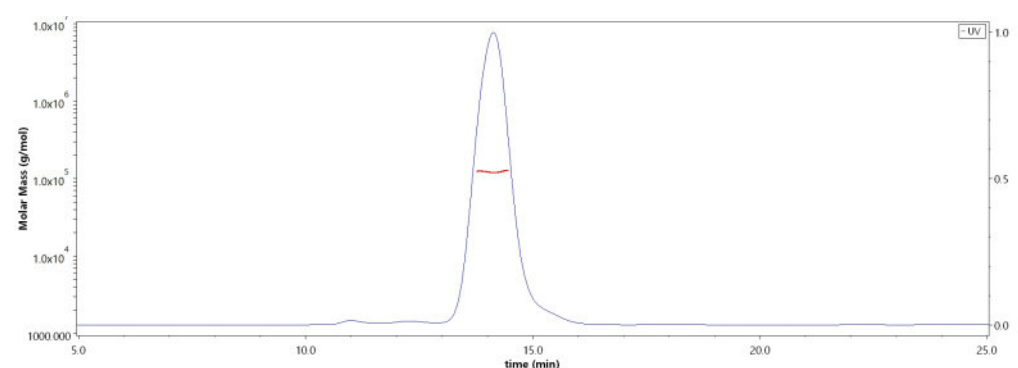
**SDS-PAGE**



Biotinylated Human PD-1, Fc,Avitag,His Tag on SDS-PAGE under reducing (R) and non-reducing (NR) conditions. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

**Bioactivity-ELISA**

**SEC-MALS**

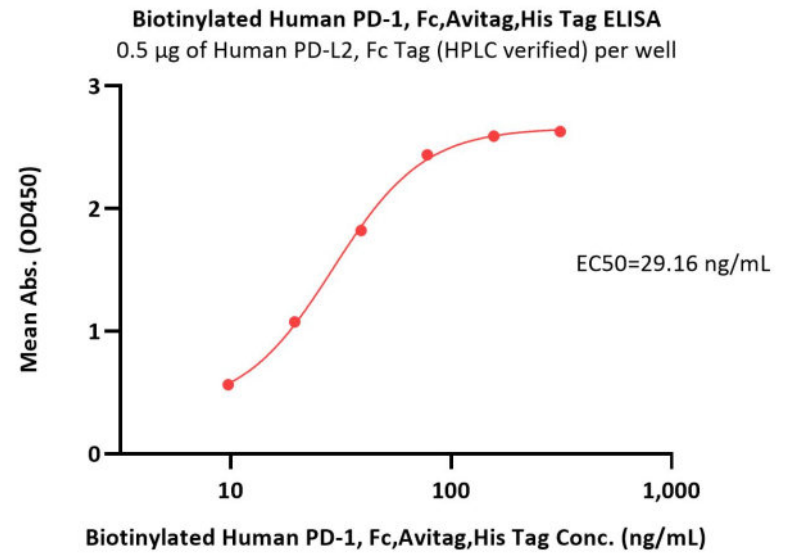
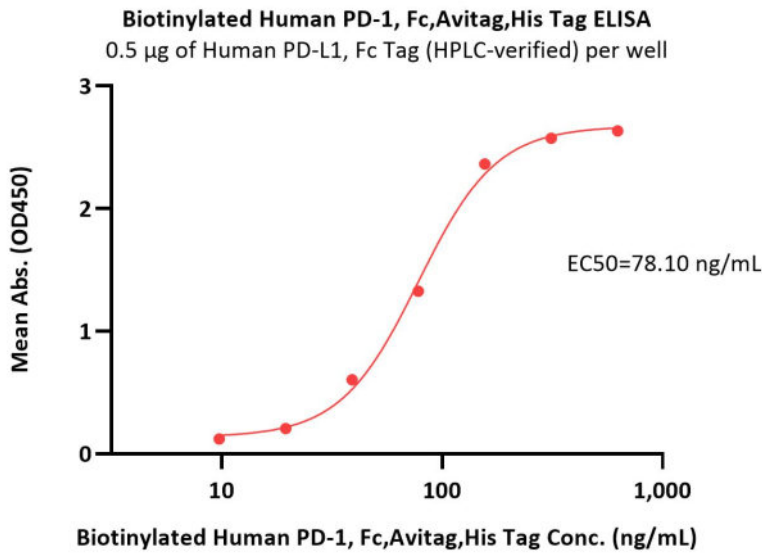


The purity of Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) is more than 90% and the molecular weight of this protein is around 113-133 kDa verified by SEC-MALS.

[Report](#)

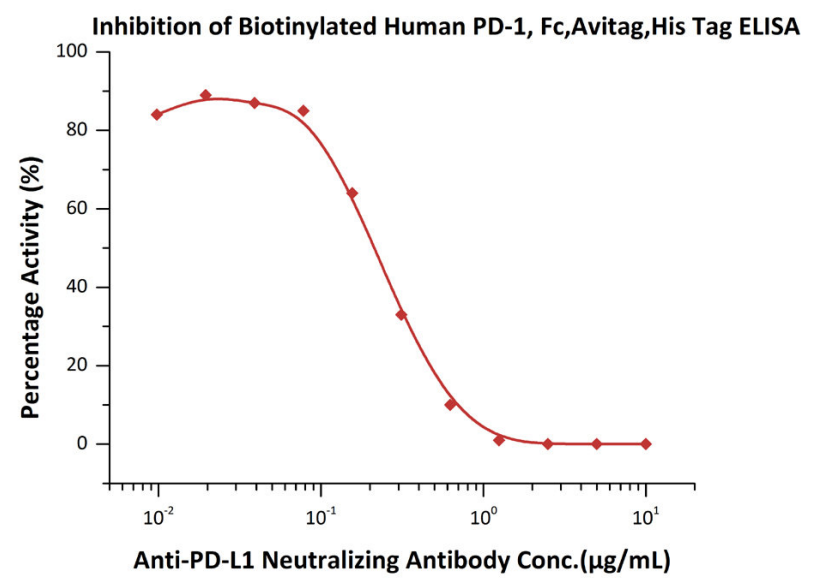
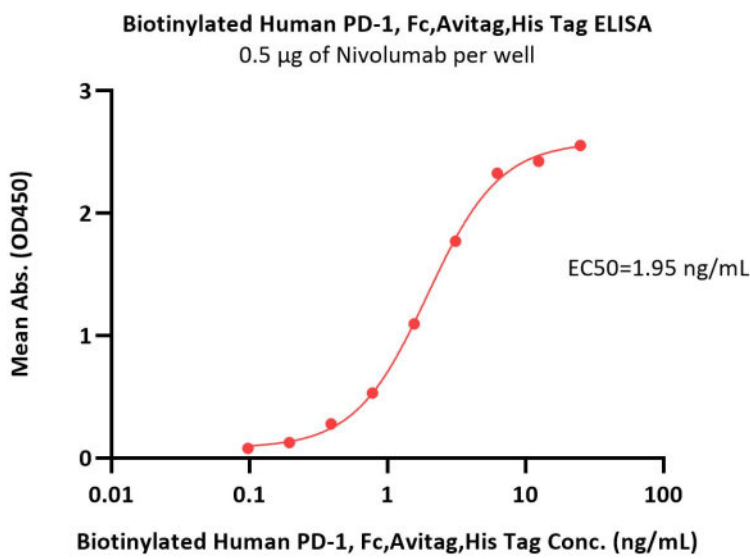
Discounts, Gifts, and more!





Immobilized Human PD-L1, Fc Tag (HPLC-verified) (Cat. No. PD1-H5258) at 5 µg/mL (100 µL/well) can bind Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) with a linear range of 10-156 ng/mL (QC tested).

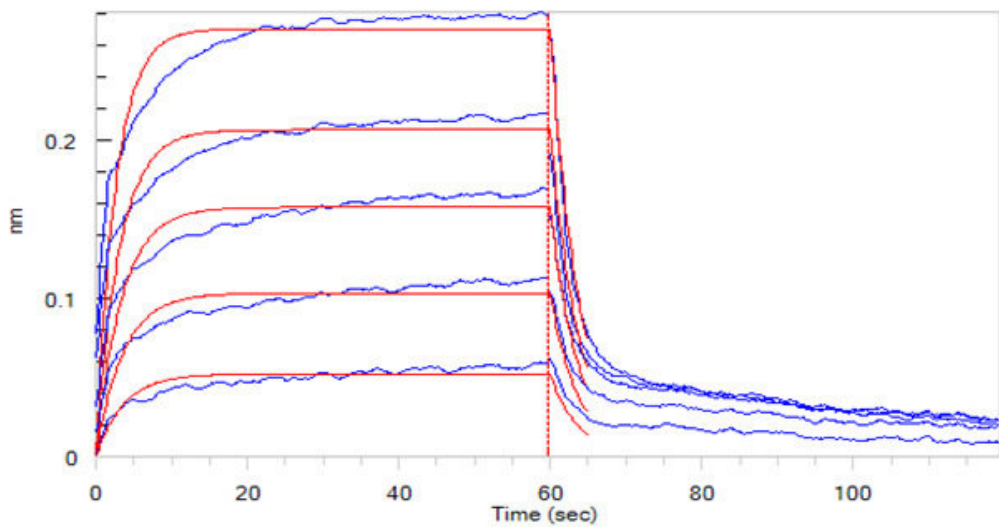
Immobilized Human PD-L2, Fc Tag (HPLC verified) (Cat. No. PD2-H5251) at 5 µg/mL (100 µL/well) can bind Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) with a linear range of 10-40 ng/mL (Routinely tested).



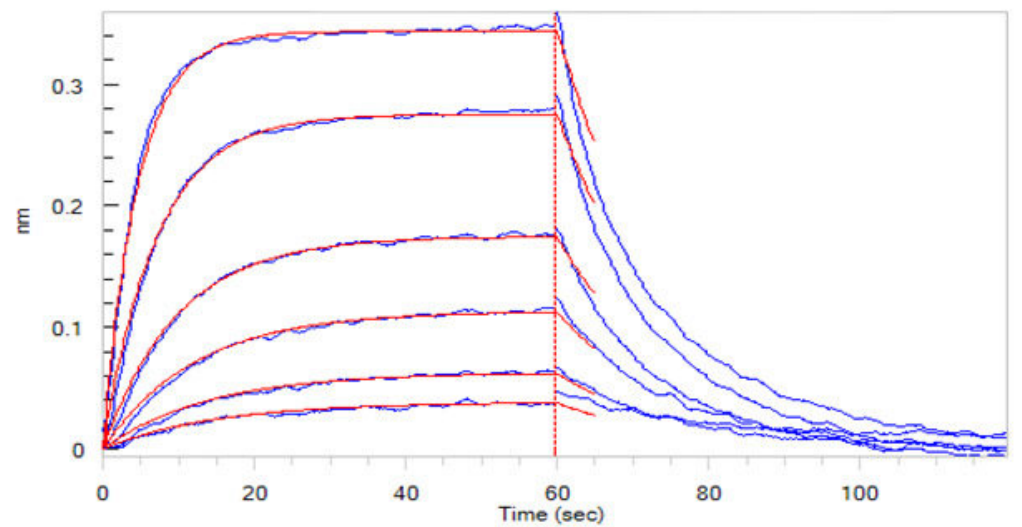
Immobilized Nivolumab at 5 µg/mL (100 µL/well) can bind Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) with a linear range of 0.1-3 ng/mL (Routinely tested).

Serial dilutions of Anti-PD-L1 Neutralizing Antibody were added into Human PD-L1, Fc Tag (HPLC-verified) (Cat. No. PD1-H5258): Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) binding reactions. The half maximal inhibitory concentration (IC50) is 0.2394 µg/mL (Routinely tested).

**Bioactivity-BLI**



Loaded Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) on SA Biosensor, can bind Human PD-L1, His Tag (HPLC verified) (Cat. No. PD1-H5258).



Loaded Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) on SA Biosensor, can bind PD-L2, His Tag (SPR verified) (Cat. No. PD2-H5251).

Discounts, Gifts, and more!



# Biotinylated Human PD-1 / PDCD1 Protein, Fc,Avitag™,His Tag (MALS verified)

Catalog # PD1-H82F4



BIOSYSTEMS  
**Acro**

PD1-H5229) with an affinity constant of 1.6  $\mu$ M as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

H5220) with an affinity constant of 0.42  $\mu$ M as determined in BLI assay (ForteBio Octet Red96e) (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- $\gamma$ . 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- $\gamma$  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- $\gamma$  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](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.

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