

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

| | | | |
|------------------------------------|---------------------------------|-----|----------|
| PD-1(Leu 25 - Gln 167) Q15116-1 | Fc(Pro 100 - Lys 330) P01857 | Avi | Poly-his |
|------------------------------------|---------------------------------|-----|----------|

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.

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

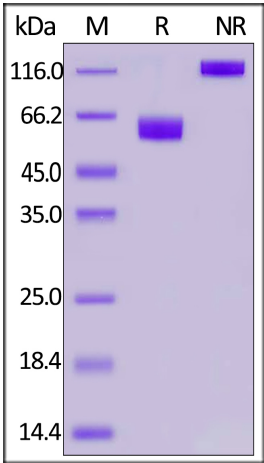
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

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.

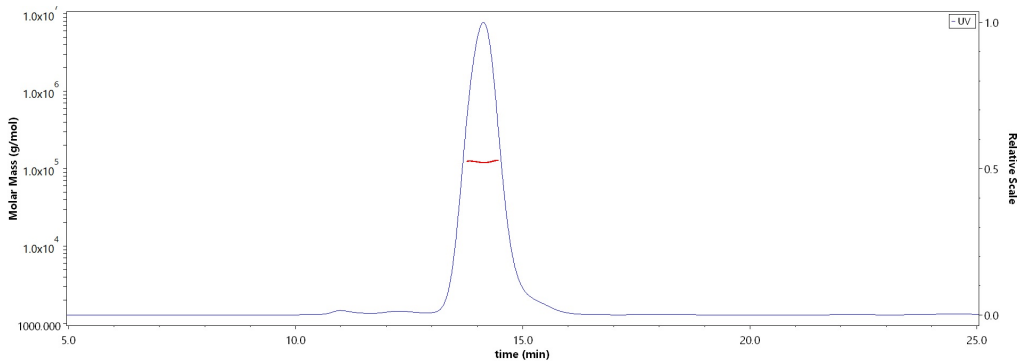
SDS-PAGE



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

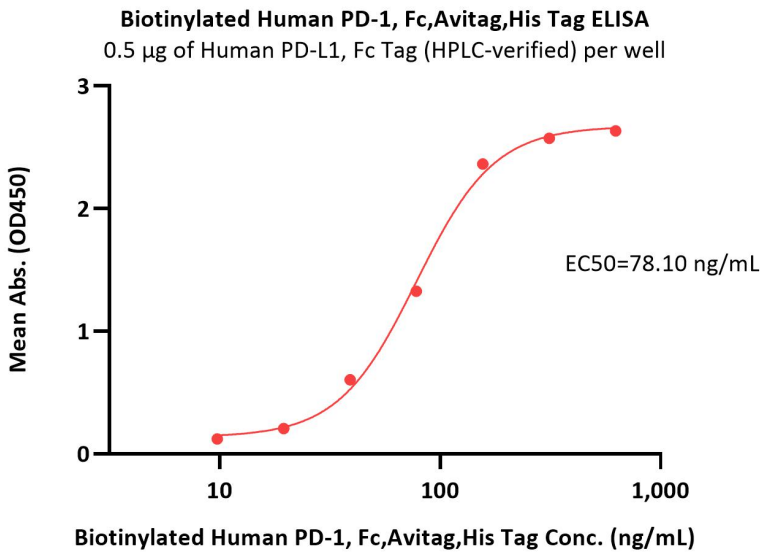
SEC-MALS



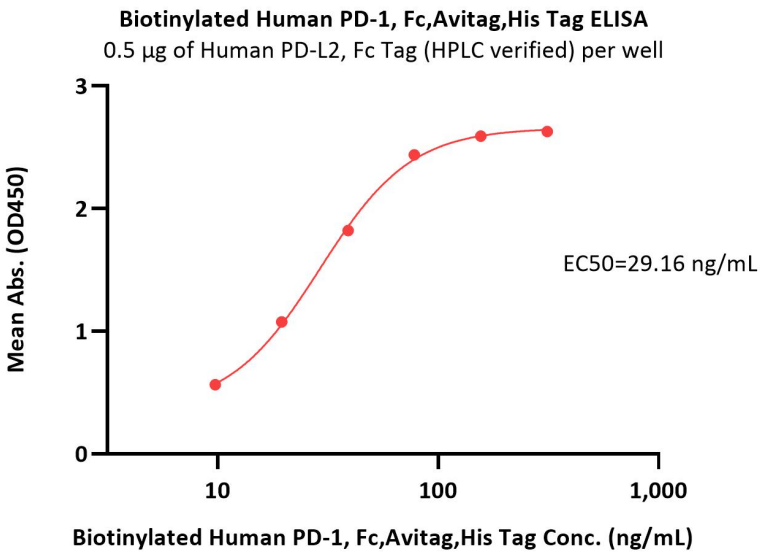
The purity of Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) is more than 90% and the molecular weight of this protein is around 113-133 kDa verified by SEC-MALS.

[Report](#)

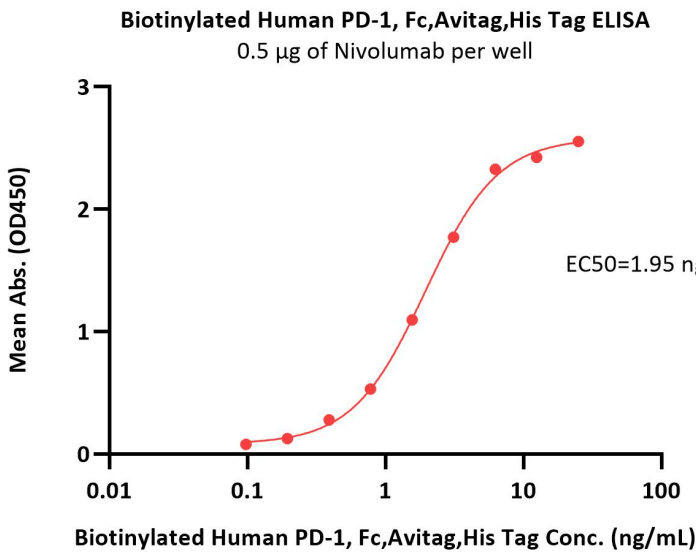




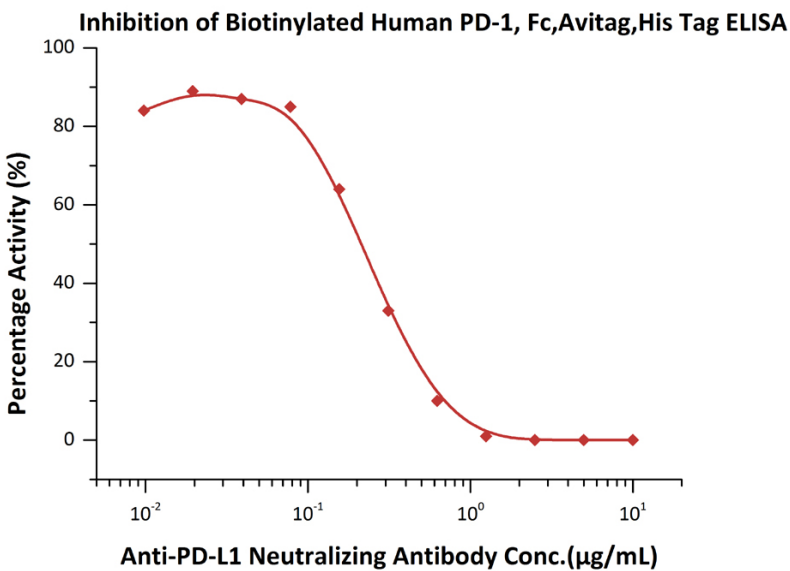
Immobilized Human PD-L1, Fc Tag (HPLC-verified) (Cat. No. PD1-H5258) at 5 µg/mL (100 µL/well) can bind Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) with a linear range of 10-156 ng/mL (QC tested).



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).

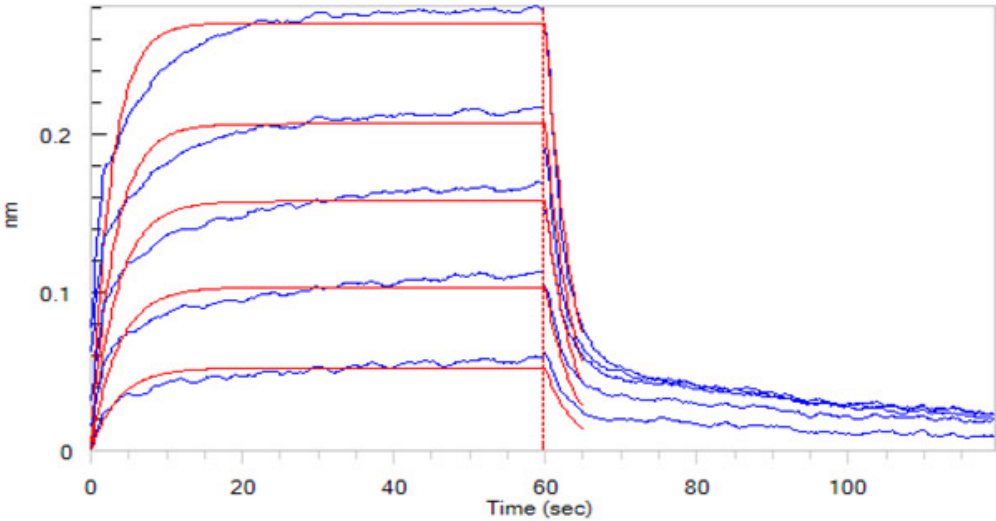


Immobilized Nivolumab at 5 µg/mL (100 µL/well) can bind Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) with a linear range of 0.1-3 ng/mL (Routinely tested).

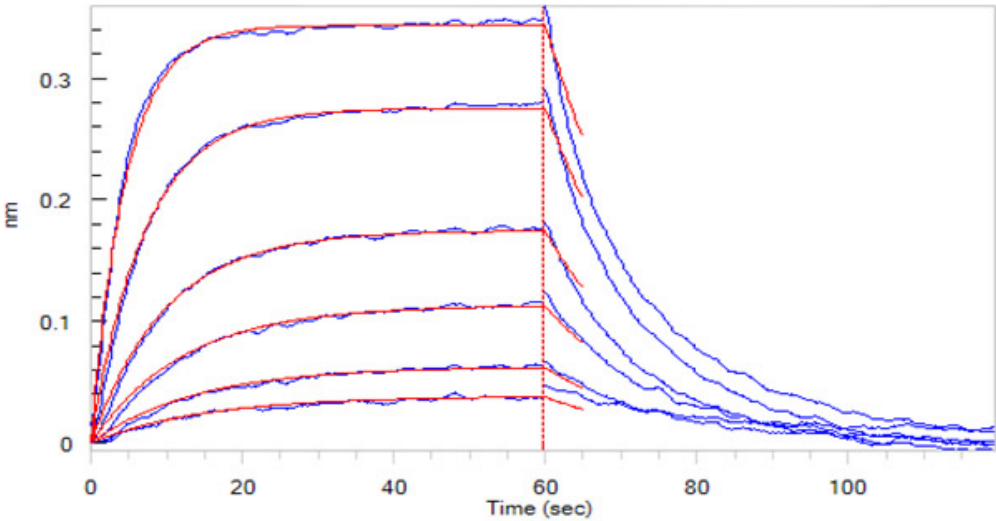


Serial dilutions of Anti-PD-L1 Neutralizing Antibody were added into Human PD-L1, Fc Tag (HPLC-verified) (Cat. No. PD1-H5258): Biotinylated Human PD-1, Fc,Avitag,His Tag (Cat. No. PD1-H82F4) binding reactions. The half maximal inhibitory concentration (IC50) is 0.2394 µg/mL (Routinely tested).

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).





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

H5220) with an affinity constant of 0.42 μ 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- 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.

