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

Catalog # PD1-H82F1

Synonym

PDCD1,PD1,CD279,SLEB2

Source

Biotinylated Human PD-1, Fc,Avitag(PD1-H82F1) 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 tag at the C-terminus, followed by an Avi tag (Avitag™).

The protein has a calculated MW of 44.4 kDa. The protein migrates as 55-66 kDa under reducing (R) 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

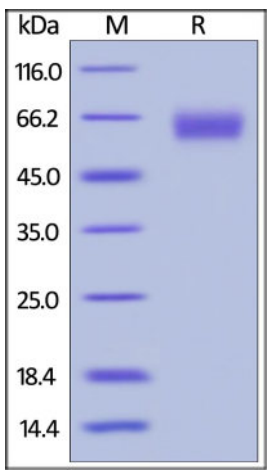
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

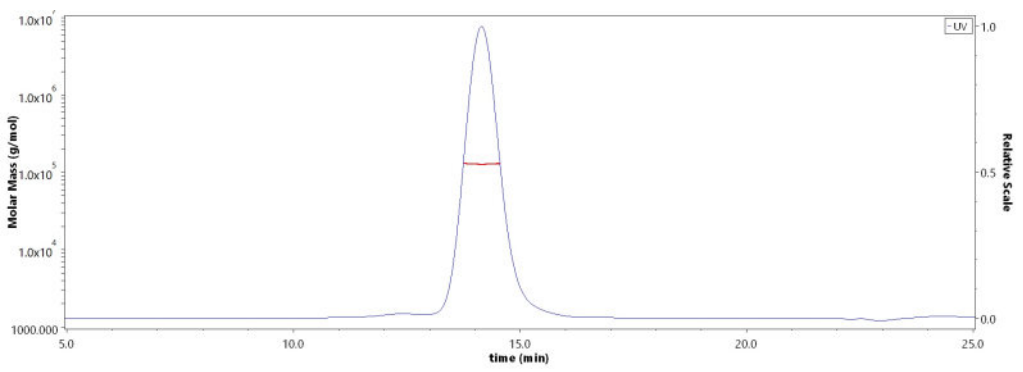
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



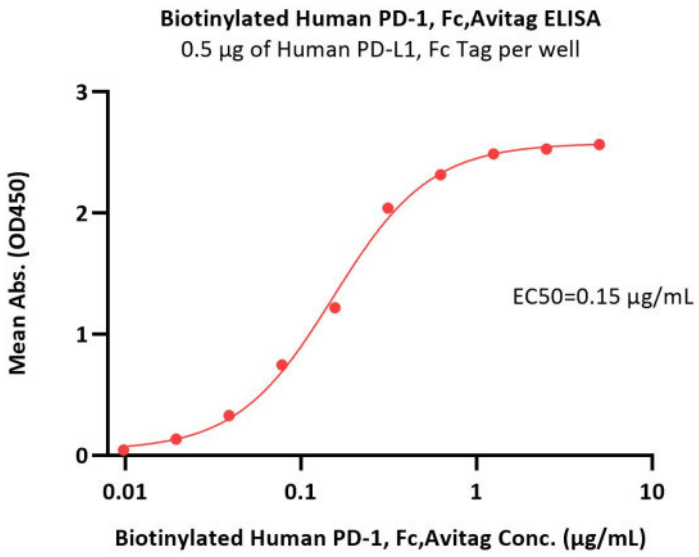
Biotinylated Human PD-1, Fc,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS

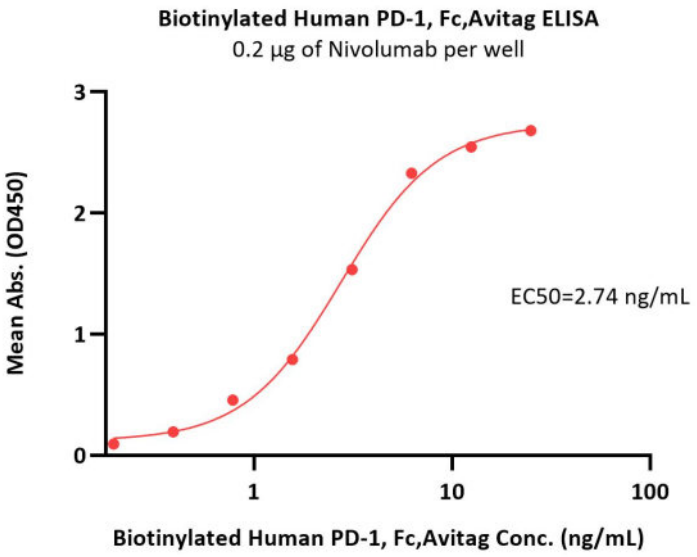


The purity of Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) is more than 90% and the molecular weight of this protein is around 115-130 kDa verified by SEC-MALS.
Report

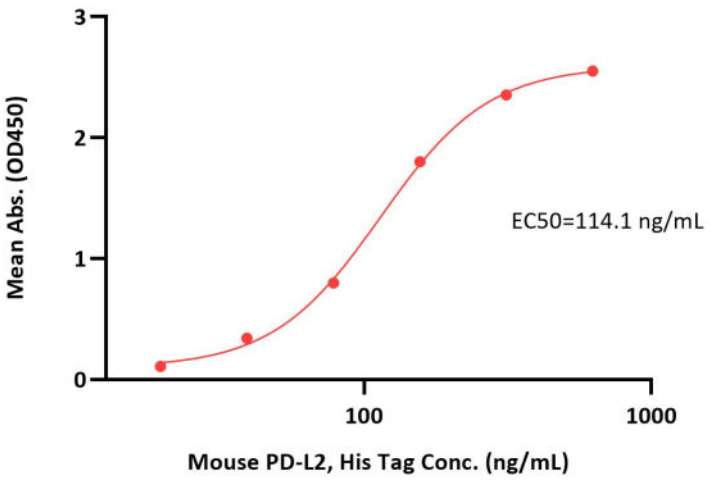
Bioactivity-ELISA



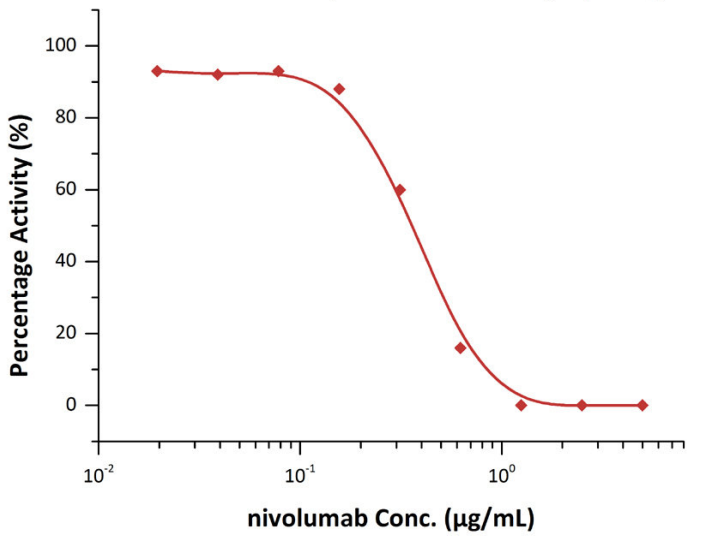
Immobilized Human PD-L1, Fc Tag (Cat. No. PD1-H5258) at 5 μg/mL (100 μL/well) can bind Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) with a linear range of 0.02-0.32 μg/mL (QC tested).



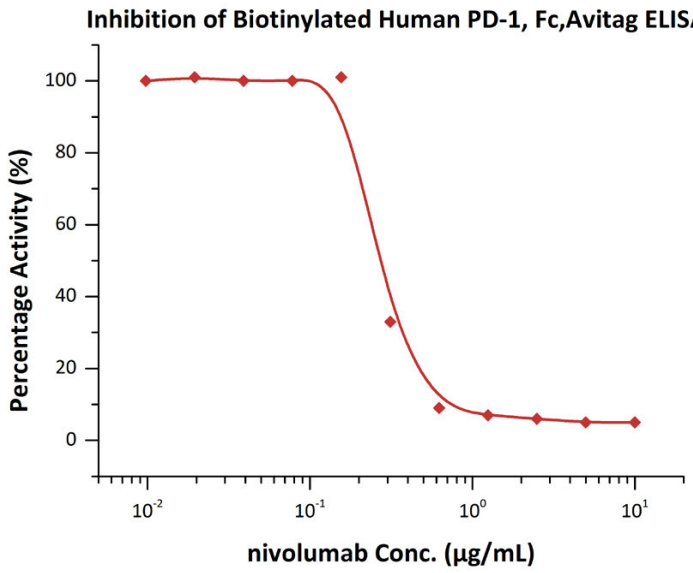
Immobilized Nivolumab at 2 μg/mL (100 μL/well) can bind Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) with a linear range of 0.2-6 ng/mL (Routinely tested).



Immobilized Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) at 1 μg/mL (100 μL/well) on streptavidin precoated (0.2 μg/well) plate, can bind Mouse PD-L2, His Tag (Cat. No. PD2-M52E3) with a linear range of 20-156 ng/mL (Routinely tested).

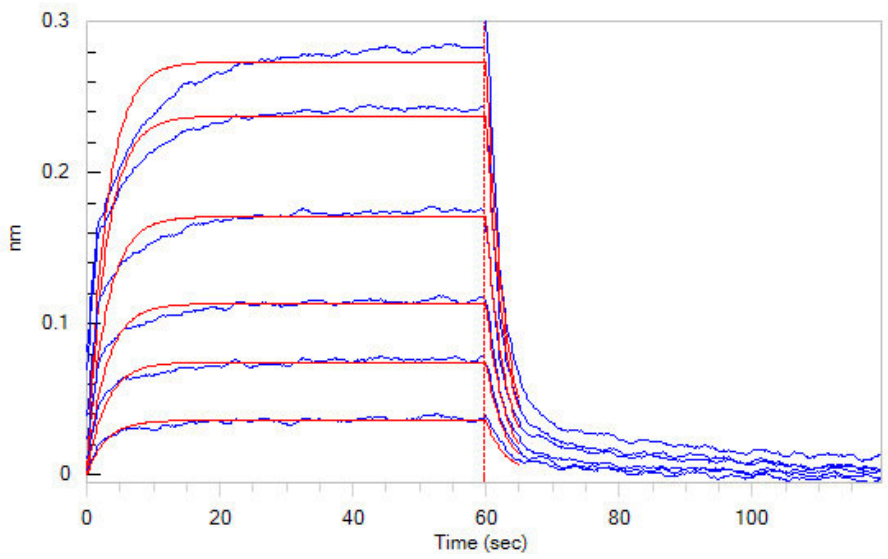


Serial dilutions of nivolumab were added into Human PD-L1, Mouse IgG1 Fc Tag, low endotoxin (HPLC-verified) (Cat. No. PD1-H52A3): Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) binding reactions. The half maximal inhibitory concentration (IC50) is 0.3789 μg/mL (Routinely tested).

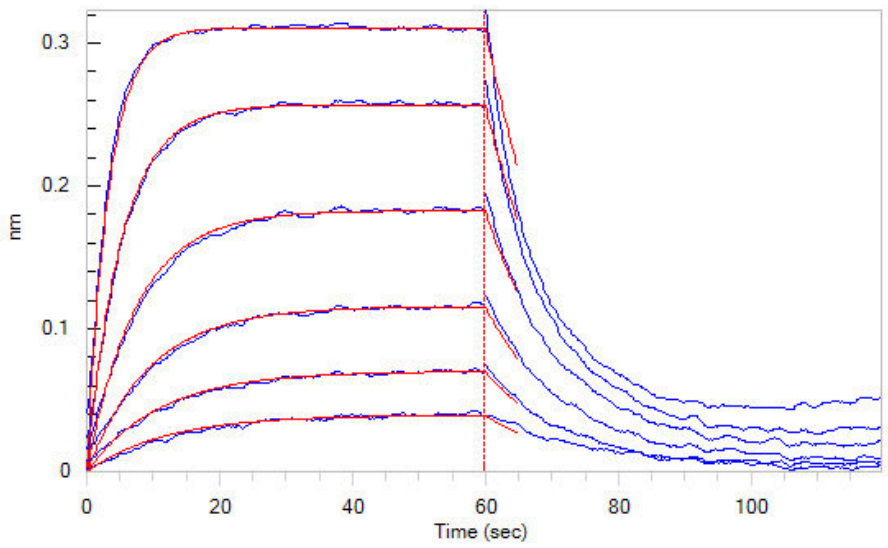


Serial dilutions of nivolumab were added into Human PD-L2, Mouse IgG1 Fc Tag (Cat. No. PD2-H52A5): Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) binding reactions. The half maximal inhibitory concentration (IC50) is 0.2823 μg/mL (Routinely tested).

Bioactivity-BLI



Loaded Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) on SA Biosensor, can bind Human PD-L1, His Tag (HPLC verified) (Cat. No. PD1-H5229) with an affinity constant of 2.5 μM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Biotinylated Human PD-1, Fc,Avitag (Cat. No. PD1-H82F1) on SA Biosensor, can bind Human PD-L2, His Tag (SPR verified) (Cat. No. PD2-H5220) with an affinity constant of 0.31 μM 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.

Clinical and Translational Updates

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