

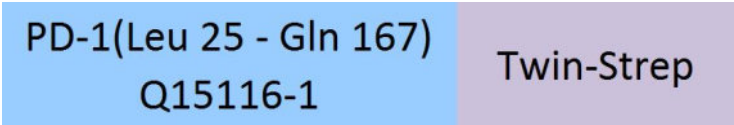
Synonym

PDCD1,PD1,CD279,SLEB2

Source

Human PD-1 Protein, Twin-Strep Tag(PD1-H5284) 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 twin strep tag at the C-terminus  
The protein has a calculated MW of 19.0 kDa. The protein migrates as 30-45 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>90% 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.*

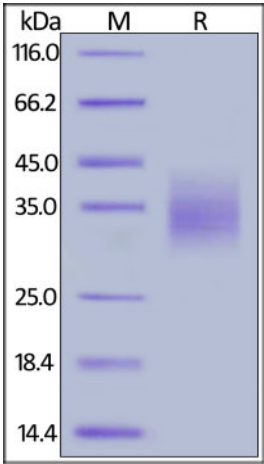
Storage

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.

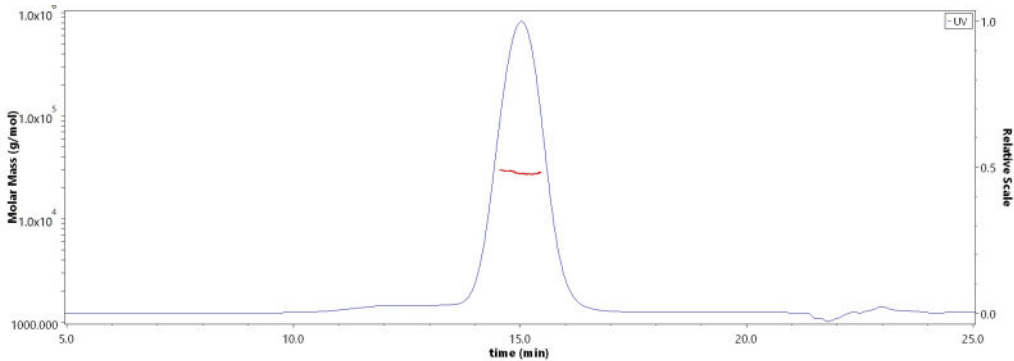
SDS-PAGE



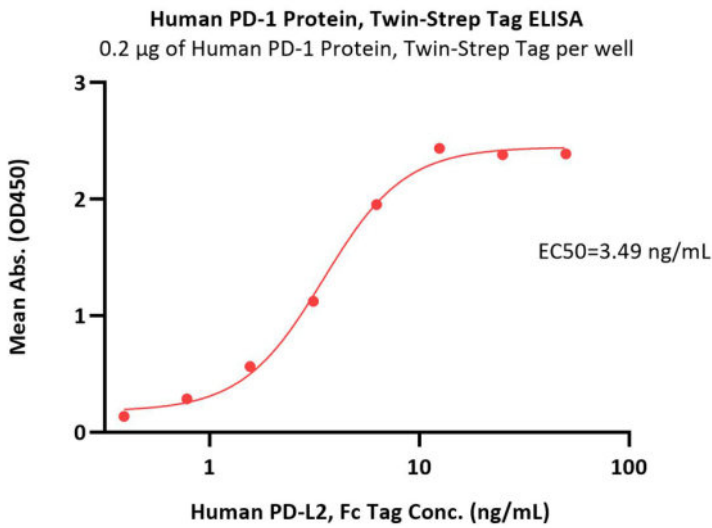
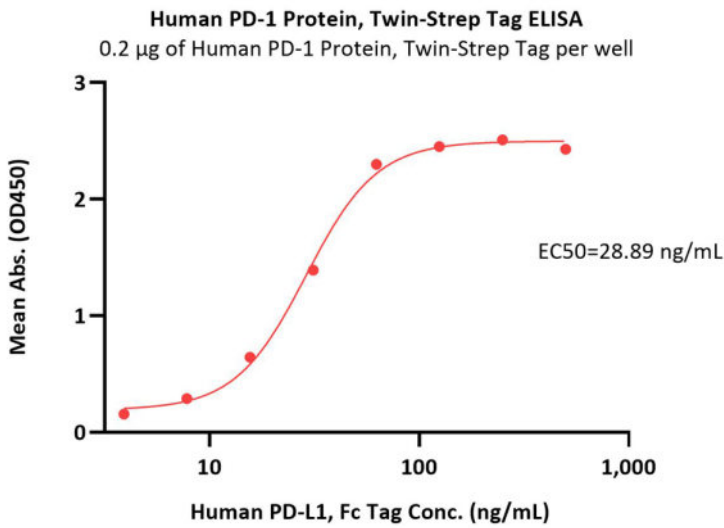
Human PD-1 Protein, Twin-Strep Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

Bioactivity-ELISA

SEC-MALS

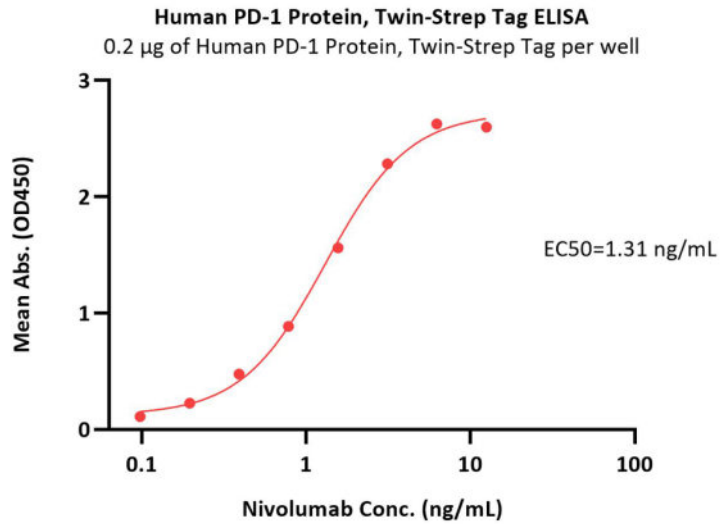


The purity of Human PD-1 Protein, Twin-Strep Tag (Cat. No. PD1-H5284) is more than 90% and the molecular weight of this protein is around 22-34 kDa verified by SEC-MALS.  
[Report](#)



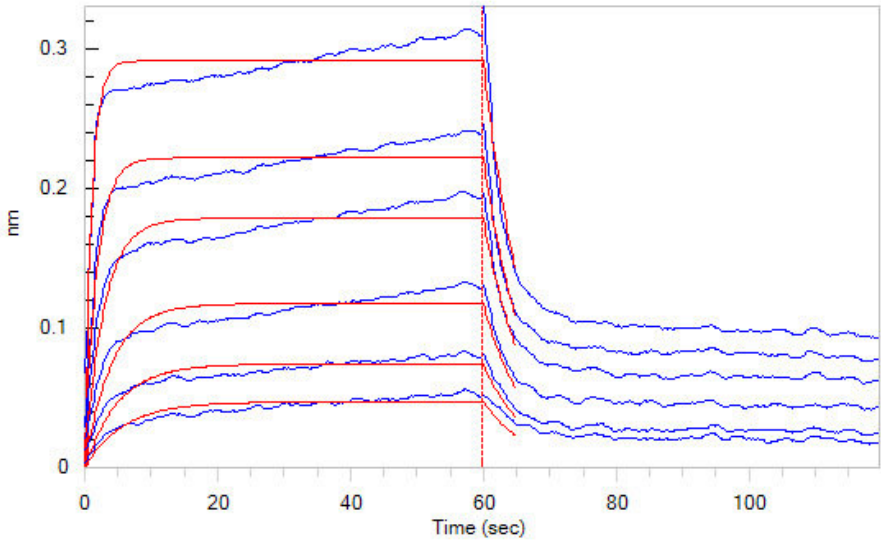
Immobilized Human PD-1 Protein, Twin-Strep Tag (Cat. No. PD1-H5284) at 2 µg/mL (100 µL/well) can bind Human PD-L1, Fc Tag (Cat. No. PD1-H5258) with a linear range of 4-63 ng/mL (QC tested).

Immobilized Human PD-1 Protein, Twin-Strep Tag (Cat. No. PD1-H5284) at 2 µg/mL (100 µL/well) can bind Human PD-L2, Fc Tag (Cat. No. PD2-H5251) with a linear range of 0.4-6 ng/mL (Routinely tested).

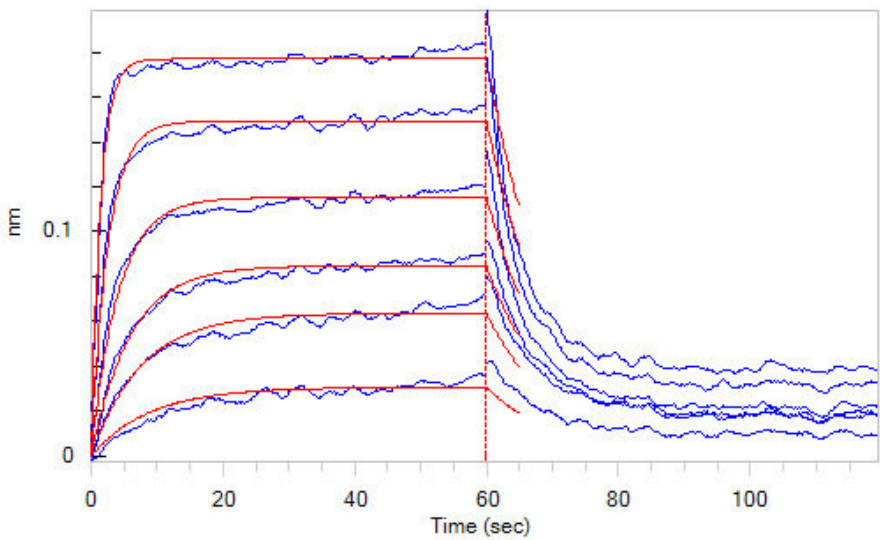


Immobilized Human PD-1 Protein, Twin-Strep Tag (Cat. No. PD1-H5284) at 2 µg/mL (100 µL/well) can bind Nivolumab with a linear range of 0.1-3 ng/mL (Routinely tested).

Bioactivity-BLI



Loaded Human PD-L1, Fc Tag (Cat. No. PD1-H5258) on Protein A Biosensor, can bind Human PD-1 Protein, Twin-Strep Tag (Cat. No. PD1-H5284) with an affinity constant of 2.5 µM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Human PD-L2 Protein, Fc Tag (Cat. No. PD2-H5251) on Protein A Biosensor, can bind Human PD-1 Protein, Twin-Strep Tag (Cat. No. PD1-H5284) with an affinity constant of 0.42 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- $\gamma$ . 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-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- $\gamma$  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.