



### Synonym

PDCD1, PD1, CD279, SLEB2

### Source

Human PD-1, Mouse IgG2a Fc Tag (PD1-H5255) 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)<br>Q15116-1 | mFc (Glu 98 - Lys 330)<br>P01863 |
|-------------------------------------|----------------------------------|

This protein carries a mouse IgG2a Fc tag at the C-terminus.

The protein has a calculated MW of 42.5 kDa. The protein migrates as 55-66 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-HPLC.

### 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

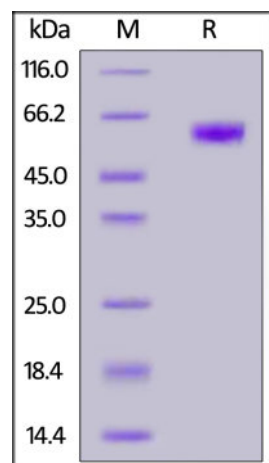
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*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 12 months under sterile conditions after reconstitution.

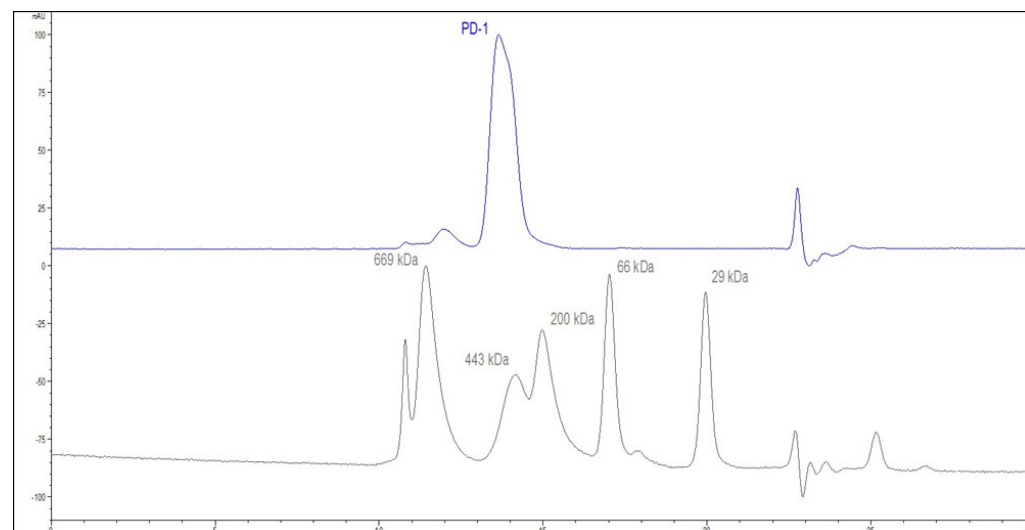
### SDS-PAGE



Human PD-1, Mouse IgG2a 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%.

### Bioactivity-ELISA

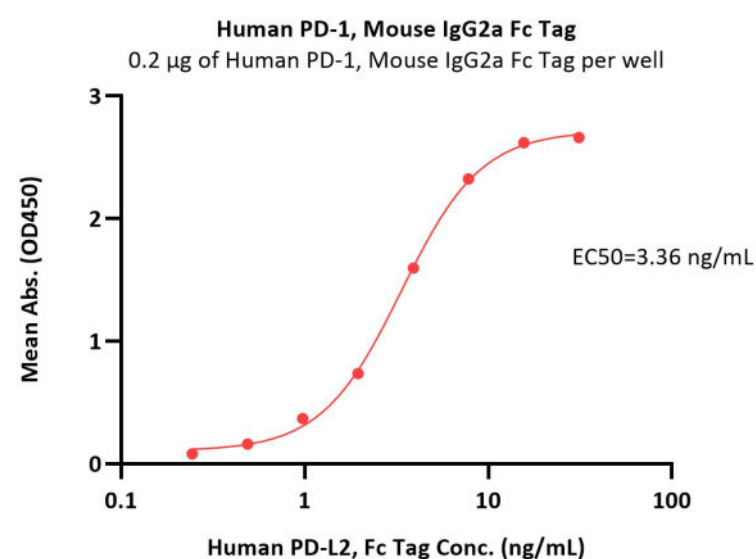
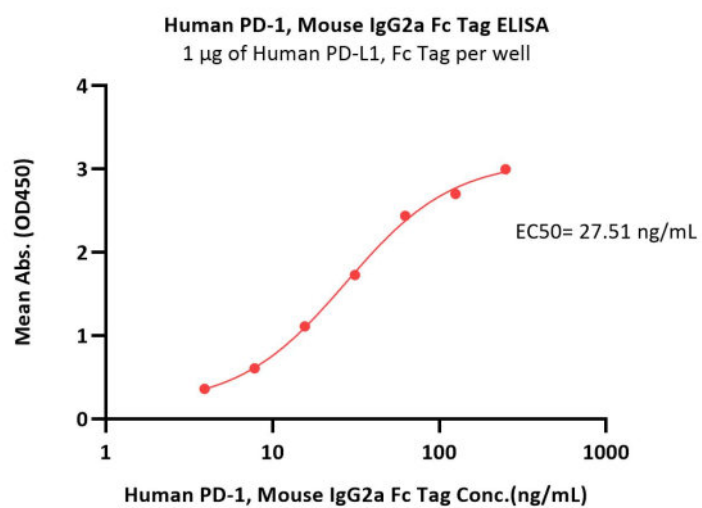
### SEC-HPLC



The purity of Human PD-1, Mouse IgG2a Fc Tag (Cat. No. PD1-H5255) was greater than 90% as determined by SEC-HPLC.

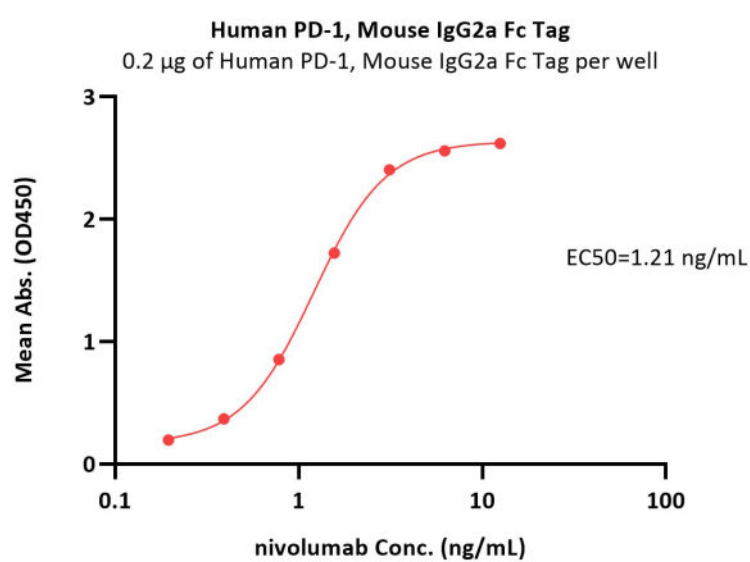
Discounts, Gifts,  
and more!





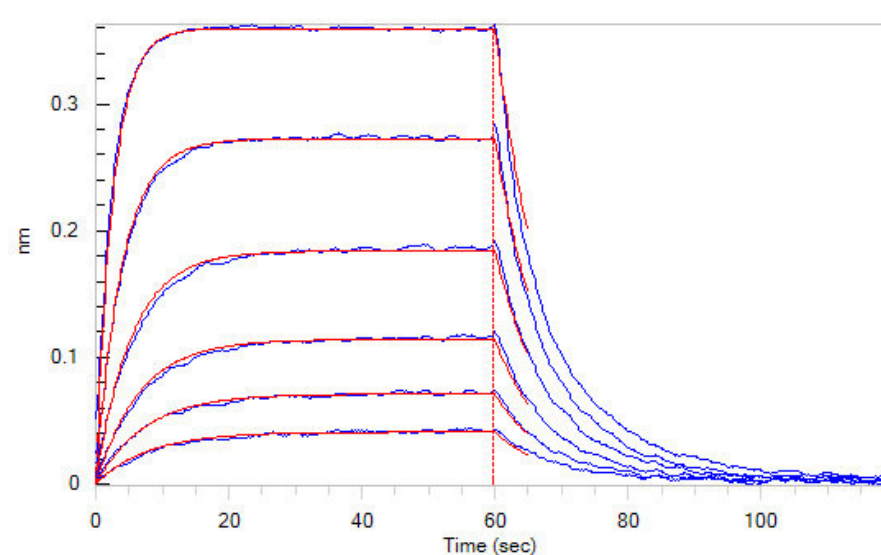
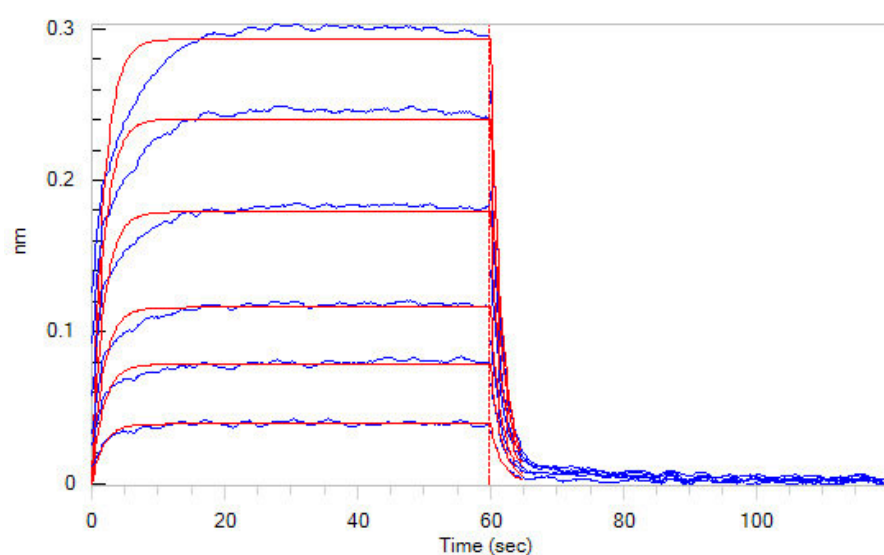
Immobilized Human PD-L1, Fc Tag (Cat. No. PD1-H5258) at 10 µg/mL (100 µL/well) can bind Human PD-1, Mouse IgG2a Fc Tag (Cat. No. PD1-H5255) with a linear range of 4-63 ng/mL (QC tested).

Immobilized Human PD-1, Mouse IgG2a Fc Tag (Cat. No. PD1-H5255) at 2 µg/mL (100 µL/well) can bind Human PD-L2, Fc Tag (Cat. No. PD2-H5251) with a linear range of 0.2-4 ng/mL (Routinely tested).



Immobilized Human PD-1, Mouse IgG2a Fc Tag (Cat. No. PD1-H5255) at 2 µg/mL (100 µL/well) can bind Nivolumab with a linear range of 0.1-2 ng/mL (Routinely tested).

**Bioactivity-BLI**



Loaded Human PD-1, Mouse IgG2a Fc Tag (Cat. No. PD1-H5255) on Protein A Biosensor, can bind Human PD-L1, His Tag (Cat. No. PD1-H5229) with an affinity constant of 2.6 µM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Loaded Human PD-1, Mouse IgG2a Fc Tag (Cat. No. PD1-H5255) on Protein A Biosensor, can bind Human PD-L2, His Tag (Cat. No. PD2-H5220) with an affinity constant of 0.43 µM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Discounts, Gifts, and more!





## 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

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