Synonym

PDCD1,PD1,CD279,SLEB2

Source

Human PD-1, Tag Free, Full Length (PD1-HC214) is expressed from human 293 cells (HEK293). It contains AA Leu 25 - Leu 288 (Accession # NP_005009.2).
N-terminal Sequence Analysis: Leu 25

Molecular Characterization

PD-1(Leu 25 - Leu 288)
NP_005009.2

This protein carries no "tag".

The protein has a calculated MW of 28.8 kDa. The protein migrates as 35-66 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>85% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in
Tris with Glycine, Arginine and NaCl, pH7.5. Normally trehalose is added as protectant before lyophilization.

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.

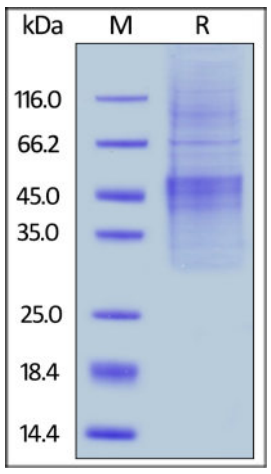
Storage

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

Please avoid repeated freeze-thaw cycles.

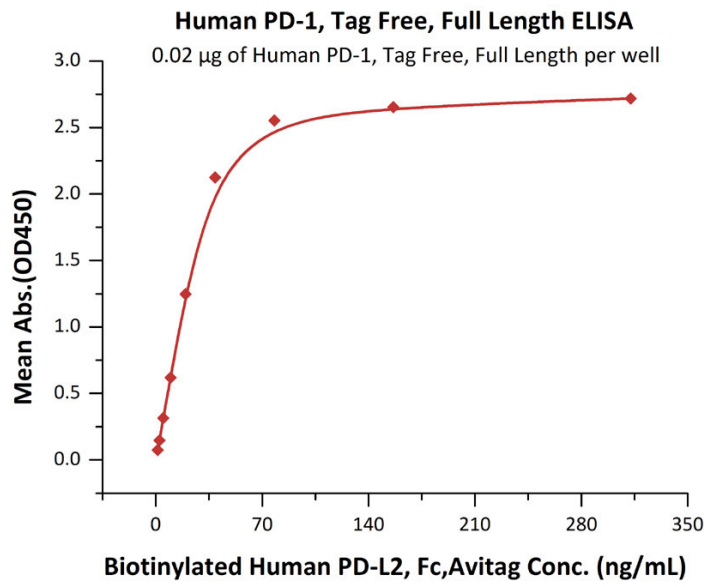
This product is stable after storage at:
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



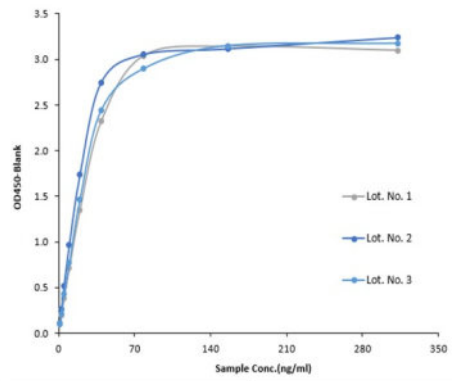
Human PD-1, Tag Free, Full Length on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 85%.

Bioactivity-ELISA



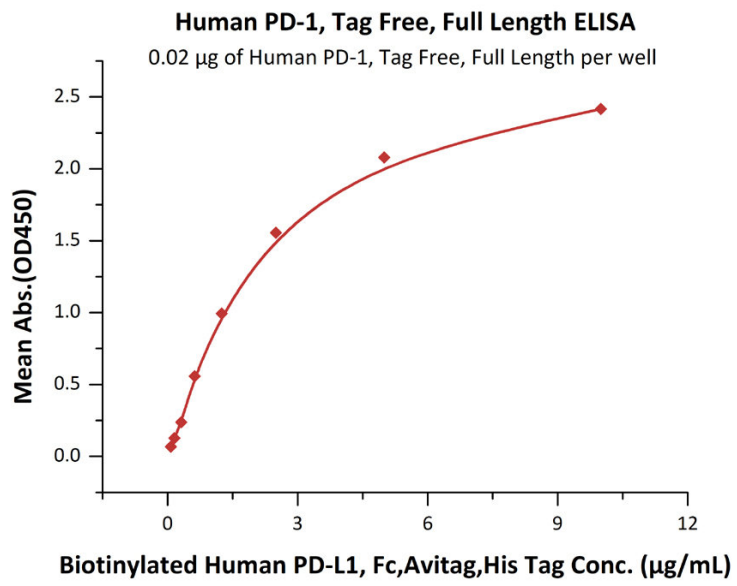
Immobilized Human PD-1, Tag Free, Full Length (Cat. No. PD1-HC214) at 0.2 µg/mL (100 µL/well) can bind Biotinylated Human PD-L2, Fc,Avitag (Cat. No. PD2-H82F6) with a linear range of 1-39 ng/mL (QC tested).

Batch consistency

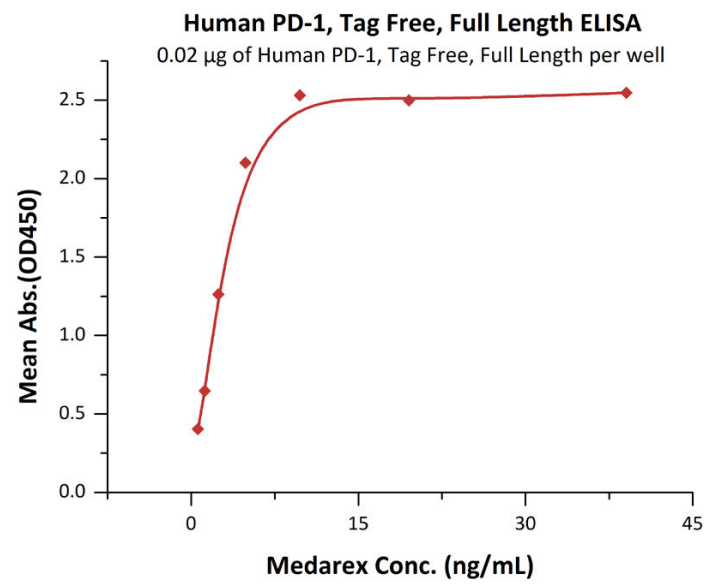


Lot. No.	EC50(µg/mL)
Lot. No. 1	0.0233
Lot. No. 2	0.0174
Lot. No. 3	0.0216

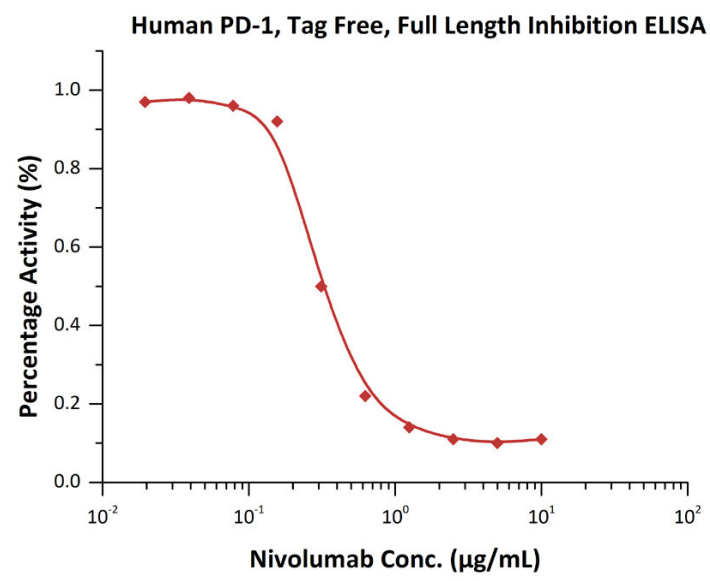
Report



Immobilized Human PD-1, Tag Free, Full Length (Cat. No. PD1-HC214) at 0.2 µg/mL (100 µL/well) can bind Biotinylated Human PD-L1, Fc,Avitag,His Tag (Cat. No. PD1-H82F3) with a linear range of 0.078-2.5 µg/mL (Routinely tested).



Immobilized Human PD-1, Tag Free, Full Length (Cat. No. PD1-HC214) at 0.2 µg/mL (100 µL/well) can bind Medarex with a linear range of 0.6-5 ng/mL (Routinely tested).



Immobilized Human PD-1, Tag Free, Full Length (Cat. No. PD1-HC214) at 0.2 µg/mL (100 µL/well), can bind pre-mixed increasing concentrations of Nivolumab and 1 µg/mL (100 µL/well) Human PD-L1, Mouse IgG1 Fc Tag, low endotoxin (HPLC-verified) (Cat. No. PD1-H52A3) with a half maximal inhibitory concentration (IC50) of 0.30 µg/mL (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.

References

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(3) Agata Y., et al., 1996, Int. Immunol. 8 (5): 765–72.
(4) Freeman GJ., et al., 2000, J. Exp. Med. 192 (7): 1027–34.
(5) Latchman Y., et al., 2001, Nat. Immunol. 2 (3): 261–8.
(6) Yamazaki T., et al., 2002, J. Immunol. 169 (10): 5538–45.

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