

## PD-1 Protein, Human, Recombinant (His)

## General Information

Synonyms:	PD1;hPD-l;hPD-1;CD279;programmed cell death 1;hSLE1;SLEB2;PD-1
Protein Construction:	A DNA sequence encoding the extracellular domain (Met 1-Gln 167) of human PD1 (NP_005009.2) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Leu 25
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q15116
Molecular Weight:	17.4 kDa (predicted); 41.1 kDa (reducing condition, due to glycosylation)

## QC Testing

Biological Activity:	<ol style="list-style-type: none"><li>1. Immobilized human PD-1 at 2 µg/ml (100 µl/well) can bind PD-L1 Protein, Human, Recombinant (ECD, hFc Tag) , the EC50 of human B7-H1 is 150-600 ng/mL.&lt;br&gt;</li><li>2. Immobilized human PD-1 at 2 µg/mL (100 µL/well) can bind Anti-PD1(MDX)-IgG4 Antibody (Nivolumab), the EC50 is 8-60 ng/mL.&lt;br&gt;</li><li>3. Loaded Anti-human PD1 antibody, IgG4 on ProA Biosensor, can bind Recombinant Human PD1 Protein, His Tag with an affinity constant of 2.44 nM as determined in a BLI assay (Sartorius Octet RED384) (Routinely tested).&lt;br&gt;</li><li>4. Captured Anti-PD1 Mab (Human IgG4) on proA Chip can bind PD1 with an affinity constant of 10.03nM as determined in a SPR assay(Routinely tested) .</li></ol>
Purity:	> 95 % as determined by SDS-PAGE. > 90 % as determined by SEC-HPLC.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing 50 mM MOPS, 500 mM NaCl, pH 7.0. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

## Preparation and Storage

## Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

## Stability &amp; Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

## Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

## Protein Background

Programmed cell death 1, also known as PDCD1, is a type I transmembrane glycoprotein, and is an immunoreceptor belonging to the CD28/CTLA-4 family negatively regulates antigen receptor signaling by recruiting protein tyrosine phosphatase, SHP-2 upon interacting with either of two ligands, PD-L1 or PD-L2. 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. PD1 has been suggested to be involved in lymphocyte clonal selection and peripheral tolerance, and thus contributes to the prevention of autoimmune diseases. Furthermore, PD1 is shown to be a regulator of virus-specific CD8+ T cell survival in HIV infection. As a cell surface molecule, PDCD1 regulates the adaptive immune response. Engagement of PD-1 by its ligands PD-L1 or PD-L2 transduces a signal that inhibits T-cell proliferation, cytokine production, and cytolytic function. Cancer Immunotherapy Co-inhibitory Immune Checkpoint Targets Immune Checkpoint Immune Checkpoint Blockade: Blocking Antibody Immune Checkpoint Blockade: PD1 / PDCD1 / CD279 Immune Checkpoint Detection: Antibodies Immune Checkpoint Detection: ELISA Antibodies Immune Checkpoint Detection: IHC Antibodies Immune Checkpoint Detection: WB Antibodies Immune Checkpoint Proteins Immune Checkpoint Targets Immunotherapy PD1 / PDCD1 / CD279 Immune Checkpoint PD1 / PDCD1 / CD279 Immune Checkpoint Antibody PD1 / PDCD1 / CD279 Immune Checkpoint Protein Targeted Therapy

## Reference

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