

Human PD1 / PDCD1 Protein (His Tag)

Catalog Number: 10377-H08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CD279; hPD-1; hPD-I; hSLE1; PD-1; PD1; SLEB2

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.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE. > 90 % as determined by SEC-HPLC.

Bio Activity:

1. Immobilized human PD-1 (Cat:10377-H08H) at 2 µg/ml (100 µl/well) can bind PD-L1 Protein, Human, Recombinant (ECD, hFc Tag) (Cat:10084-H02H), the EC50 of human B7-H1 is 150-600 ng/mL.
2. Immobilized human PD-1 (Cat:10377-H08H) at 2 µg/mL (100 µL/well) can bind Anti-PD1(MDX)-IgG4 Antibody (Nivolumab)(Cat:68050-H001), the EC50 is 8-60 ng/mL.
3. Labeled biotin to PD-1 Protein, Human, Recombinant (His Tag) by a certain molar ratio; Using the Octet RED System, the affinity constant (Kd) of PD-1 Protein, Human, Recombinant (His Tag), Biotinylated(Cat. 10377-H08H-B) bound to Keytruda was 0.1 nM.
4. Captured Anti-PD1 Mab (Human IgG4) on proA Chip can bind PD1 (Cat.No.10377-H08H) with an affinity constant of 10.03nM as determined in a SPR assay (Biacore T200)(Routinely tested) .
5. Captured Anti-PD-L1 Mab (Human IgG1) on proA Chip can bind PD-L1 (Cat.No.10084-H08H) with an affinity constant of 1.381nM as determined in a SPR assay (Biacore T200)(Routinely tested) .

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Predicted N terminal: Leu 25

Molecular Mass:

The recombinant mature human PD1 consists of 154 amino acids and has a calculated molecular mass of 17.4 kDa. As a result of glycosylation, human PD1 migrates as an approximately 41.1 kDa protein in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM MOPS, 500mM NaCl, pH 7.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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-γ 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.

References

1. James ES, *et al.* (2005) PDCD1: a tissue-specific susceptibility locus for inherited inflammatory disorders. *Genes Immun.* 6(5): 430-7.
2. Okazaki T, *et al.* (2007) PD-1 and PD-1 ligands: from discovery to clinical application. *Int Immunol.* 19(7): 813-24.
3. del Rio ML, *et al.* (2008) PD-1/PD-L1, PD-1/PD-L2, and other co-inhibitory signaling pathways in transplantation. *Transpl Int.* 21(11): 1015-28.