Datasheet for ABIN2181593

PD-1 Protein (AA 25-167) (His tag,AVI tag,Biotin)

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Overview

Quantity:	200 µg
Target:	PD-1 (PDCD1)
Protein Characteristics:	AA 25-167
Origin:	Human
Source:	HEK-293 Cells
Protein Type:	Recombinant
Biological Activity:	Active
Purification tag / Conjugate:	This PD-1 protein is labelled with His tag,AVI tag,Biotin.

Product Details

Brand:	MABSol®,PrecisionAvi
Sequence:	AA 25-167
Specificity:	Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.
Characteristics:	This protein carries an Avi tag (Avitag™) at the C-terminus, followed by a polyhistidine tag. The protein has a calculated MW of 18.6 kDa. The protein migrates as 30-48 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.
Purity:	>95 % as determined by SDS-PAGE.
Sterility:	0.22 µm filtered
Endotoxin Level:	Less than 1.0 EU per µg by the LAL method.

Target Details

Target:	PD-1 (PDCD1)
Alternative Name:	PD-1 (PDCD1 Products)
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.
Molecular Weight:	18.6 kDa
NCBI Accession:	NP_005009
Pathways:	Cancer Immune Checkpoints

Application Details

Comment:	Ready-to-use AvitagTM biotinylated protein: The product is exclusively produced using the AvitagTM technology. Briefly, a unique 15 amino acid peptide, the Avi tag, is introduced into the recombinant protein during expression vector construction. The single lysine residue in the Avi tag is enzymatically biotinylated by the E. Coli biotin ligase BirA. This single-point enzymatic labeling technique brings many advantages for commonly used binding assays. The biotinylation happens on the lysine residue of Avi tag, and therefore does NOT interfere with the target protein's natural binding activities. In addition, when immobilized on an avidin-coated surface, the protein orientation is uniform because the position of the Avi tag in the protein is precisely controlled.
Restrictions:	For Research Use only

Handling

Format:	Lyophilized
Buffer:	PBS, pH 7.4
Handling Advice:	Please avoid repeated freeze-thaw cycles.
Storage:	-20 °C
Storage Comment:	No activity loss was observed after storage at: In lyophilized state for 1 year (4 °C), After reconstitution under sterile conditions for 3 months (-70 °C).

Publications

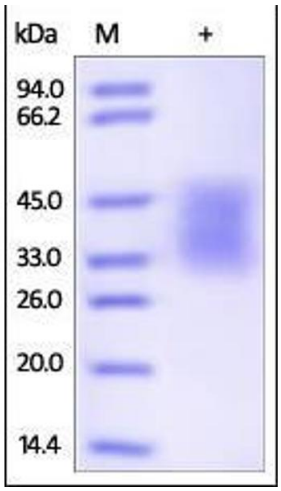
Product cited in:

Wang, Fei, Jing, Wu, Wu, Zhou, Ni, Chen, Xiong, Liu, Peng, Yu, Jiang, Liu: "Durable blockade of PD-1 signaling links preclinical efficacy of sintilimab to its clinical benefit." in: **mAbs**, (2019) (PubMed).

Ganesan, Ahmed, Okoye, Arutyunova, Babu, Turnbull, Kundu, Shields, Agopsowicz, Xu, Tabana, Srivastava, Zhang, Moon, Belovodskiy, Hena, Kandadai, Hosseini, Hitt, Walker, Smylie, West, Siraki, Lemieux et al.: "Comprehensive in vitro characterization of PD-L1 small molecule inhibitors. ..." in: **Scientific reports**, Vol. 9, Issue 1, pp. 12392, (2019) (PubMed).

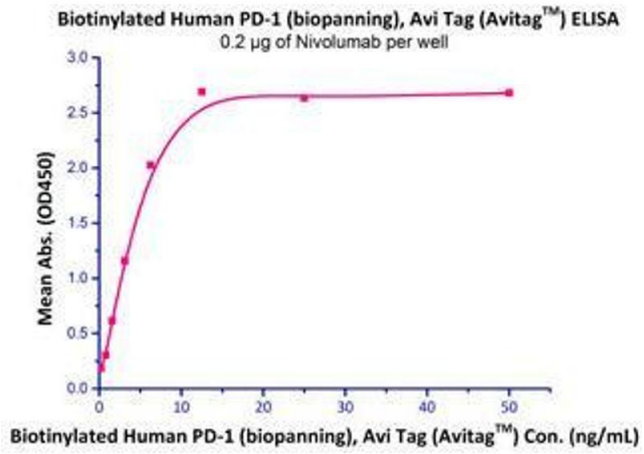
Son, Park, Seo, Lee, Heo, Kim: "A small-sized protein binder specific for human PD-1 effectively suppresses the tumour growth in tumour mouse model." in: **Journal of drug targeting**, pp. 1-9, (2019) (PubMed).

Fromm, de Silva, Johannes, Patel, Hornblower, Schreiber: "Agonist redirected checkpoint, PD1-Fc-OX40L, for cancer immunotherapy." in: **Journal for immunotherapy of cancer**, Vol. 6, Issue 1 , pp. 149, (2018) (PubMed).



SDS-PAGE

Image 1. Biotinylated Human PD-1 (recommended for biopanning) on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.



Binding Studies

Image 2. Immobilized Nivolumab at 2μg/mL (100 μl/well),can bind Biotinylated Human PD-1, His Tag (Cat# PD1-H82E4) with a linear range of 0.8-6 ng/mL.