

## PD-1 Protein, Human (C93S, HEK293, His)

Cat. No.:	HY-P70799
Synonyms:	Programmed cell death protein 1; PDCD1; PD-1; hPD-1; CD279
Species:	Human
Source:	HEK293
Accession:	Q15116 (L25-Q167,C93S)
Gene ID:	5133
Molecular Weight:	23-38 kDa

### PROPERTIES

AA Sequence	<p>           L D S P D R P W N P    P T F S P A L L V V    T E G D N A T F T C    S F S N T S E S F V            L N W Y R M S P S N    Q T D K L A A F P E    D R S Q P G Q D S R    F R V T Q L P N G R            D F H M S V V R A R    R N D S G T Y L C G    A I S L A P K A Q I    K E S L R A E L R V            T E R R A E V P T A    H P S P S P R P A G    Q F Q         </p>
Biological Activity	2 µg/mL (100 µL/well) of immobilized Human PD-1-His can bind Anti-Human PD-1 with an ED50 value of 11.55 ng/mL, corresponding to an affinity constant of 4.97 nM.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

Background	<p>PD-1 protein functions as an inhibitory receptor on antigen-activated T-cells, playing a crucial role in the induction and maintenance of immune tolerance to self. Upon binding to its ligands CD274/PDCD1L1 and CD273/PDCD1LG2, PD-1 delivers inhibitory signals and associates with CD3-TCR in the immunological synapse, directly impeding T-cell activation. This inhibitory action is further executed through the recruitment of PTPN11/SHP-2, leading to the dephosphorylation of key TCR proximal signaling molecules. Exploited by tumors to attenuate anti-tumor immunity, PD-1's interaction with</p>
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CD274/PDCD1L1 inhibits cytotoxic T lymphocytes (CTLs) effector function. Blockage of the PD-1-mediated pathway has shown promise in reversing the exhausted T-cell phenotype and normalizing the anti-tumor response, providing a rationale for cancer immunotherapy.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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