

PD-1

Catalog # PVGS1554

### Specification

# **PD-1 - Product Information**

Primary Accession Species Mouse

Sequence Leu25-Gln167

Purity > 95% as analyzed by SDS-PAGE

Endotoxin Level < 1 EU/  $\mu$ g of protein by gel clotting method

Expression System HEK 293

Formulation

Lyophilized from a 0.2  $\mu m$  filtered solution in PBS.

Reconstitution

It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in  $ddH_2O$  or PBS up to 100 µg/ml.

Q02242

Storage & Stability

Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

# PD-1 - Additional Information

Gene ID 18566

Other Names Programmed cell death protein 1, Protein PD-1, mPD-1, CD279, Pdcd1 {ECO:0000312|MGI:MGI:104879}

**Target Background** 

Programmed cell death protein 1, also known as PD-1 and CD279 (cluster of differentiation 279) or PDCD1, is a protein that in humans is encoded by the PDCD1 gene. PD-1 is a cell surface receptor that belongs to the immunoglobulin superfamily and is expressed on T cells and pro-B cells.PD-1 binds two ligands, PD-L1 and PD-L2. PD-1 and its ligands play an important role in down regulating the immune system by preventing the activation of T-cells, which in turn reduces autoimmunity and promotes self-tolerance. The inhibitory effect of PD-1 is accomplished through a dual mechanism of promoting apoptosis (programmed cell death) in antigen specific T-cells in lymph



nodes while simultaneously reducing apoptosis in regulatory T cells (suppressor T cells).

# **PD-1 - Protein Information**

Name Pdcd1 {ECO:0000312|MGI:MGI:104879}

**Function** 

Inhibitory receptor on antigen activated T-cells that plays a critical role in induction and maintenance of immune tolerance to self (PubMed:<a

href="http://www.uniprot.org/citations/10485649" target=" blank">10485649</a>, PubMed:<a href="http://www.uniprot.org/citations/11209085" target=" blank">11209085</a>, PubMed:<a href="http://www.uniprot.org/citations/11698646" target=" blank">11698646</a>, PubMed:<a href="http://www.uniprot.org/citations/21300912" target="\_blank">21300912</a>). Delivers inhibitory signals upon binding to ligands, such as CD274/PDCD1L1 and CD273/PDCD1LG2 (PubMed:<a href="http://www.uniprot.org/citations/11015443" target=" blank">11015443</a>, PubMed:<a href="http://www.uniprot.org/citations/11224527" target=" blank">11224527</a>, PubMed:<a href="http://www.uniprot.org/citations/18287011" target=" blank">18287011</a>, PubMed: <a href="http://www.uniprot.org/citations/18641123" target=" blank">18641123</a>, PubMed:<a href="http://www.uniprot.org/citations/22641383" target="blank">22641383</a>). Following T-cell receptor (TCR) engagement, PDCD1 associates with CD3-TCR in the immunological synapse and directly inhibits T-cell activation (PubMed:<a href="http://www.uniprot.org/citations/22641383" target=" blank">22641383</a>). Suppresses T-cell activation through the recruitment of PTPN11/SHP-2: following ligand-binding, PDCD1 is phosphorylated within the ITSM motif, leading to the recruitment of the protein tyrosine phosphatase PTPN11/SHP-2 that mediates dephosphorylation of key TCR proximal signaling molecules, such as ZAP70, PRKCQ/PKCtheta and CD247/CD3zeta (PubMed:<a href="http://www.uniprot.org/citations/11698646" target="\_blank">11698646</a>, PubMed:<a href="http://www.uniprot.org/citations/22641383" target="\_blank">22641383</a>). The PDCD1-mediated inhibitory pathway is exploited by tumors to attenuate anti-tumor immunity and facilitate tumor survival (By similarity).

**Cellular Location** Cell membrane; Single-pass type I membrane protein

**Tissue Location** Thymus-specific..

### PD-1 - Protocols

Provided below are standard protocols that you may find useful for product applications.

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

PD-1 - Images