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# PD-1

Catalog # PVGS1554

## Product Information

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| **Primary Accession** | Q02242 |
| **Species** | Mouse |
| **Sequence** | Leu25-Gln167 |
| **Purity** | > 95% as analyzed by SDS-PAGE |
| **Endotoxin Level** | |
| **Expression System** | HEK 293 |
| **Formulation** | Lyophilized from a 0.2 μm 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. |
| **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. |

## Additional Information

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| **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). |

## Protein Information

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| **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:10485649, PubMed:11209085, PubMed:11698646, PubMed:21300912). Delivers inhibitory signals upon binding to ligands, such as CD274/PDCD1L1 and CD273/PDCD1LG2 (PubMed:11015443, PubMed:11224527, PubMed:18287011, PubMed:18641123, PubMed:22641383). Following T-cell receptor (TCR) engagement, PDCD1 associates with TCR-CD3 in the immunological synapse and directly inhibits T-cell activation (PubMed:22641383). 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:11698646, PubMed:22641383). 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.. |