

PD1 Antibody [10B3]

Catalog # ASC12125

Product Information

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| Application | WB, IHC-P, IF, ICC, E |
| Primary Accession | Q15116 |
| Other Accession | NP_005009 |
| Host | Mouse |
| Clonality | Monoclonal |
| Isotype | IgG1 |
| Clone Names | PDCD1 |
| Calculated MW | 31647 |

Additional Information

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| Gene ID | 5133 |
| Alias Symbol | PDCD1 |
| Other Names | PD-1 Antibody: PD1, PD-1, CD279, SLEB2, hPD-1, hPD-I, hSLE1, PD1, Programmed cell death protein 1, Protein PD-1, PDCD1, PDCD-1 |
| Reconstitution & Storage | PD-1 antibody can be stored at 4° C for three months and -20° C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures. |
| Precautions | PD1 Antibody [10B3] is for research use only and not for use in diagnostic or therapeutic procedures. |

Protein Information

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| Name | PDCD1 {ECO:0000303 PubMed:7851902, ECO:0000312 HGNC:HGNC:8760} |
| Function | Inhibitory receptor on antigen activated T-cells that plays a critical role in induction and maintenance of immune tolerance to self (PubMed: 21276005 , PubMed: 31754127 , PubMed: 32184441 , PubMed: 37208329). Delivers inhibitory signals upon binding to ligands CD274/PDCD1L1 and CD273/PDCD1LG2 (PubMed: 21276005 , PubMed: 26602187). Following T-cell receptor (TCR) engagement, PDCD1 associates with TCR-CD3 in the immunological synapse and directly inhibits T-cell activation (PubMed: 32184441). 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/PKTheta and CD247/CD3zeta (PubMed: 32184441). |
| Cellular Location | Cell membrane; Single-pass type I membrane protein |

Background

Cell-mediated immune responses are initiated by T lymphocytes that are themselves stimulated by cognate peptides bound to MHC molecules on antigen-presenting cells (APC). T-cell activation is generally self-limited as activated T cells express receptors such as PD-1 (also known as PDCD-1) that mediate inhibitory signals from the APC. PD-1 can bind two different but related ligands, PDL-1 and PDL-2. Upon binding to either of these ligands, signals generated by PD-1 inhibit the activation of the immune response in the absence of "danger signals" such as LPS or other molecules associated with bacteria or other pathogens. Evidence for this is seen in PD-1-null mice who exhibit hyperactivated immune systems and autoimmune diseases. PD-1 is thus one of a growing number of immune checkpoint proteins.

References

Hollings TM, Schooten E, and van Den Elsing PJ. Function and regulation of MHC class II molecules in T-lymphocytes: of mice and men. *Hum. Immunol.* 2004; 65:282-90. Ishida Y, Agata Y, Shibahara K, et al. Induced expression of PD-1, a novel member of the immunoglobulin gene superfamily, upon programmed cell death. *EMBO J.* 1992; 11:3887-95. Zhong X, Bai C, Gao W, et al. Suppression of expression and function of negative immune regulator PD-1 by certain pattern recognition and cytokine receptor signals associated with immune system danger. *Int. Immunol.* 2004; 16:1181-8. Nishimura H, Nose M, Hiai H, et al. Development of lupus-like autoimmune diseases by the disruption of the PD-1 gene encoding an ITIM motif-carrying immunoreceptor. *Immunity* 1999; 11:141-51.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.