

PRODUCT INFORMATION

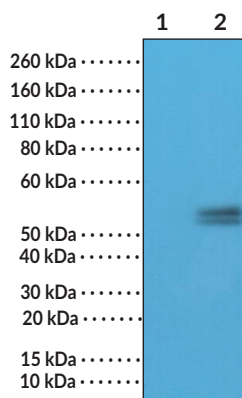


PD-1/CD279 (N-Term) Rabbit Monoclonal Antibody (Clone RM309) Item No. 32253

Overview and Properties

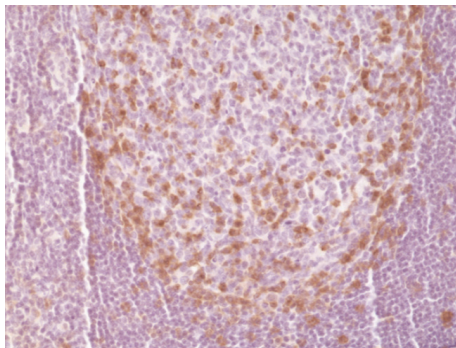
Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	CD279, PDCD1, Programmed Cell Death Protein 1
Immunogen:	Peptide from the N-terminal region of human PD-1
Cross Reactivity:	(+) PD-1
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM309
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:500 for IHC and 1:100-1:200 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: Jurkat cells untreated
Lane 2: Jurkat cells treated

WB of Jurkat cells untreated or treated with PHA and PMA using PD-1/CD279 (N-Term) Rabbit Monoclonal Antibody (Clone RM309) at a 1:100 dilution.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human tonsil tissue using PD-1/CD279 (N-Term) Rabbit Monoclonal Antibody (Clone RM309) at a 1:500 dilution.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Programmed cell death protein 1 (PD-1), also known as CD279, is a cell surface receptor belonging to the immunoglobulin superfamily that is involved in regulation and attenuation of the adaptive immune response.^{1,2} It is a 288-amino acid type I transmembrane protein encoded by the *PDCD1* gene in humans and is composed of a 167-amino acid ectodomain consisting of an N-loop, IgV-like domain, and a stalk region, a transmembrane domain, and a cytoplasmic tail with two tyrosine-based signaling motifs.^{1,2,3,5} PD-1 is expressed in activated immune cells including CD4⁺ T cells, CD8⁺ T cells, natural killer T (NKT) cells, B cells, monocytes, and dendritic cells.^{2,6} Binding of PD-1 to either of its ligands, PD-L1 (Item No. 28378) or PD-L2 (Item No. 28379), suppresses T cell proliferation and cytokine production.¹ PD-1 deficiency induces cardiomyopathy or lupus-like glomerulonephritis in BALB/c and C57Bl/6 mice, respectively.^{2,3} Increased levels of intratumoral PD-1⁺ immune cells are associated with increased tumor size, higher nuclear grade, and poor prognosis in patients with renal cell carcinoma.⁴ Formulations containing PD-1 blocking antibodies have been used in the treatment of various cancers. Cayman's PD-1/CD279 (N-Term) Rabbit Monoclonal Antibody (Clone RM309) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Riley, J.L. PD-1 signaling in primary T cells. *Immunol. Rev.* **229(1)**, 114-125 (2009).
2. del Rio, M.L., Buhler, L., Gibbons, C.E., *et al.* PD-1/PD-L1, PD-1/PD-L2, and other co-inhibitory signaling pathways in transplantation. *Transpl. Int.* **21(11)**, 1015-1028 (2008).
3. James, E.S., Harney, S., Wordsworth, B.P., *et al.* PDCD1: A tissue-specific susceptibility locus for inherited inflammatory disorders. *Genes Immun.* **6(5)**, 430-437 (2005).
4. Thompson, R.H., Dong, H., Lohse, C.M., *et al.* PD-1 is expressed by tumor-infiltrating immune cells and is associated with poor outcome for patients with renal cell carcinoma. *Clin. Cancer Res.* **13(6)**, 1757-1761 (2007).
5. Tan, S., Zhang, H., Chai, Y., *et al.* An unexpected N-terminal loop in PD-1 dominates binding by nivolumab. *Nat. Commun.* **8**, 14369 (2017).
6. Ji, M., Liu, Y., Li, Q., *et al.* PD-1/PD-L1 pathway in non-small-cell lung cancer and its relation with EGFR mutation. *J. Transl. Med.* **13**, 5 (2015).

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