PRODUCT INFORMATION

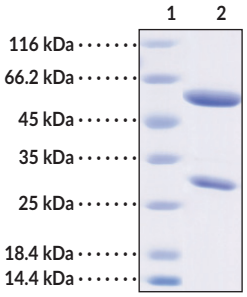
PD-1/CD279 Recombinant Monoclonal Antibody (Pembrolizumab)

Item No. 45002

Overview and Properties

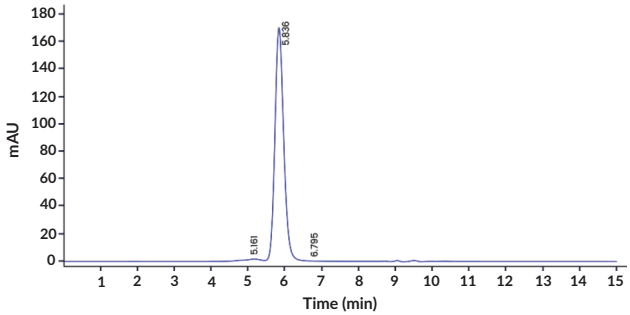
Contents: This vial contains 500 µg of PD-1 antibody.
Synonyms: CD279, PDCD1, Programmed Cell Death Protein 1
Preparation: This product is a recombinant monoclonal antibody expressed in HEK293 cells.
Cross Reactivity: (+) PD-1
Species Reactivity: (+) Human
Form: Liquid
Storage: -80°C (as supplied)
Stability: ≥1 year
Storage Buffer: Histidine buffer, pH 6.0, with 120 mM sodium chloride and 0.02% polysorbate 80
Host: Human
Isotype: IgG4κ

Images



Lane 1: MW Markers
Lane 2: PD-1/CD279

SDS-PAGE Analysis of Soluble PD-1/CD279.



≥95% as determined by SEC-HPLC.

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.[1-4] 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.[2,5] 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 $PD\text{-}1^+$ immune cells are associated with increased tumor size, higher nuclear grade, and poor prognosis in patients with renal cell carcinoma.[6] Formulations containing PD-1 blocking antibodies have been used in the treatment of various cancers. Cayman's PD-1/CD279 Recombinant Monoclonal Antibody (Pembrolizumab) recognizes PD-1 from human samples.

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. 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).
5. 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).
6. 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).

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