

Anti-Mouse PD-1 [Clone RMP1-30] — Purified *in vivo* GOLD™ Functional Grade

Monoclonal Antibody

Product Information

Product No.:	C3442
Clone:	RMP1-30
Isotype:	Rat Rat IgG2b κ
Storage:	Sterile 2-8°C

Product Description

Specificity:

RMP1-30 activity is directed against mouse PD-1 (CD279).

Antigen Distribution:

PD-1 is expressed on activated T cells, B cells, a subset of thymocytes, macrophages, dendritic cells, and some tumor cells.

Background:

PD-1, a member of the CD28/CTLA-4 subfamily of the Ig superfamily, is a transmembrane protein expressed on activated T cells, B cells, a subset of thymocytes, macrophages, dendritic cells, and some tumor cells^{1,2}. PD-1 is also retained in the intracellular compartments of human and mouse regulatory T cells (Tregs) and is co-expressed with CD25 on activated CD4+ T cells³. When stimulated via the T cell receptor (TCR), Tregs translocate PD-1 to the cell surface³. PD-1 is absent on naïve T cells and is inducibly expressed on T cells by T cell antigen receptor (TCR). B7-H1 (PD-L1; CD274) and B7-DC (PD-L2; CD273) have been identified as PD-1 ligands¹. PD-1 is co-expressed with PD-L1 on tumor cells and tumor-infiltrating antigen-presenting cells (APCs)².

PD-1 acts as a T cell inhibitory receptor and plays a critical role in peripheral tolerance induction and autoimmune disease prevention as well as important roles in the survival of dendritic cells, macrophage phagocytosis, and tumor cell glycolysis². PD-1 prevents uncontrolled T cell activity, leading to attenuation of T cell proliferation, cytokine production, and cytolytic activities. Additionally, the PD-1 pathway, consisting of PD-1 on T cells and PD-L1 on APCs, is a major mechanism of tumor immune evasion, and, as such, PD-1 is a target of cancer immunotherapy².

RMP1-30 does not block the binding of B7-H1 or B7-DC to PD-1. However, recent studies show that RMP1-30 does deplete PD-1 expressing cells²⁸.

Known Reactivity Species:

Mouse

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Product Datasheet

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Format:

in vivo GOLD™, Purified in vivo Functional Grade

Immunogen:

Mouse PD-1 transfected BHK cells

Formulation

This monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity

≥95% monomer by analytical SEC, >95% by SDS Page

Endotoxin

<1.0 EU/μg as determined by the LAL method

Storage and Stability

Functional grade preclinical antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C.

Avoid Repeated Freeze Thaw Cycles.

Product Preparation

Functional grade preclinical antibodies are manufactured in an animal free facility using *in vitro* cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Applications

Applications and Recommended Usage (Quality Tested By Leinco):

FC

IHC FF

Other Applications Reported in Literature:

FC

Depletion

Country of Origin

USA

References

1. Matsumoto K, Inoue H, Nakano T, et al. J Immunol. 172(4):2530-2541. 2004.
2. Zhao Y, Harrison DL, Song Y, et al. Cell Rep. 24(2):379-390.e6. 2018.
3. Raimondi G, Shufesky WJ, Tokita D, et al. J Immunol. 176(5):2808-2816. 2006.

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Product Datasheet

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4. Ding ZC, Habtetsion T, Cao Y, et al. *Sci Rep.* 7(1):12168. 2017.
5. Chatterjee S, Daenthanasanmak A, Chakraborty P, et al. *Cell Metab.* 27(1):85-100.e8. 2018.
6. Snell LM, MacLeod BL, Law JC, et al. *Immunity.* 49(4):678-694.e5. 2018.
7. Bradley CP, Teng F, Felix KM, et al. *Cell Host Microbe.* 22(5):697-704.e4. 2017.
8. Uchil PD, Pi R, Haugh KA, et al. *Cell Host Microbe.* 25(1):87-100.e10. 2019.
9. Timilshina M, You Z, Lacher SM, et al. *Cell Rep.* 27(10):2948-2961.e7. 2019.
10. Chow MT, Ozga AJ, Servis RL, et al. *Immunity.* 50(6):1498-1512.e5. 2019.
11. St Clair JB, Detanico T, Aviszus K, et al. *PLoS One.* 12(1):e0170556. 2017.
12. Liu QZ, Ma WT, Yang JB, et al. *Front Immunol.* 9:1090. 2018.
13. Vanderleyden I, Fra-Bido SC, Innocentin S, et al. *Cell Rep.* 30(3): 611–619.e4. 2020.
14. Bally AP, Tang Y, Lee JT, et al. *J Immunol.* 198(1):205–217. 2017.
15. Quatrini L, Wieduwild E, Escaliere B, et al. *Nat Immunol.* 19(9):954-962. 2018.
16. Shimizu K, Sugiura D, Okazaki IM, et al. *Mol Cell.* 77(5):937-950.e6. 2020.
17. Karnowski A, Chevrier S, Belz GT, et al. *J Exp Med.* 209(11):2049-2064. 2012.
18. Park HJ, Kusnadi A, Lee EJ, et al. *Cell Immunol.* 278(1-2):76-83. 2012.
19. Huang JR, Tsai YC, Chang YJ, et al. *J Immunol.* 192(4):1972-1981. 2014.
20. Park SJ, Namkoong H, Doh J, et al. *J Leukoc Biol.* 96(5):939. 2014.
21. Puleston DJ, Zhang H, Powell TJ, et al. *Elife.* 3:e03706. 2014.
22. Lu X, Ding ZC, Cao Y, et al. *J Immunol.* 194(4):2011-2021. 2015.
23. Bally AP, Lu P, Tang Y, et al. *J Immunol.* 194(9):4545-4554. 2015.
24. Zeng, W., Liu, Z., Zhang, S. et al. *Sci Rep.* 6:36560. 2016.
25. Zhuang Z, Lai X, Sun J, et al. *J Exp Med.* 218(4):e20202187. 2021.
26. Mitchell JE, Lund MM, Starmer J, et al. *Cell Rep.* 35(2):108966. 2021.
27. Christian LS, Wang L, Lim B, et al. *Cell Rep.* 35(6):109118. 2021.
28. Cui J, Xu H, Yu J, Ran S, Zhang X, et al. *Sci Immunol.* 9(94):eadh0085. 2024.

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