Mouse PD-1 Antibody

Monoclonal Rat IgG_{2A} Clone # 996221

Catalog Number: MAB77381

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse PD-1 in direct ELISAs.
Source	Monoclonal Rat IgG_{2A} Clone # 996221
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line, NS0-derived mouse PD-1 Met1-Gln167 Accession # Q02242
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

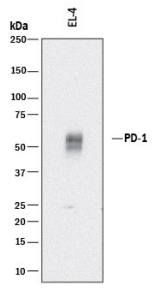
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	2 µg/mL	See Below
Flow Cytometry	0.25 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

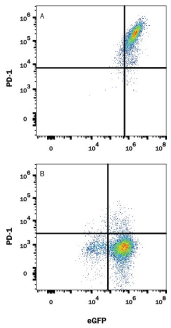
DATA

Western Blot



Detection of mouse PD-1 by Western Blot. Western blot shows lyates of EL-4 mouse lymphoblast cell line. PVDF membrane was probed with 2 µg/mL of Rat Anti-Mouse PD-1 Monoclonal Antibody (Catalog # MAB77381) followed by HRP-conjugated Anti-Rat IgG Secondary Antibody (Catalog # HAF005). Specific bands were detected for PD-1 at approximately 55 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Flow Cytometry



Detection of PD-1 in HEK293 Human Cell Line Transfected with Mouse PD-1 and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with either (A) mouse PD-1 or (B) irrelevant transfectants and eGFP was stained with Rat Anti-Mouse PD-1 Monoclonal Antibody (Catalog # MAB77381) followed by APC-conjugated Anti-Rat IgG Secondary Antibody (Catalog # F0113). Quadrant markers were set based on isotype control antibody staining (Catalog # MAB006). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Programmed Death-1 (PD-1) is a type I transmembrane protein belonging to the CD28/CTLA-4 family of immunoreceptors that mediate signals for regulating immune responses (1). Other members of this family include CD28, CTLA-4, and ICOS (2-4). PD-1 is most closely related to CTLA-4 and shares approximately 24% amino acid (aa) sequence identity. The mouse PD-1 gene encodes a 288 aa protein with a putative 20 aa signal peptide, a 149 aa extracellular region with one immunoglobulin-like V-type domain, a 21 aa transmembrane domain, and a 98 aa cytoplasmic region. The cytoplasmic tail contains two tyrosine residues that form the immunoreceptor tyrosine-based inhibitory motif (ITIM) and immunoreceptor tyrosine-based switch motif (ITSM) that are important in mediating PD-1 signaling. Mouse and human PD-1 share approximately 69% aa sequence identity. Two B7 family proteins, PD-L1 (also called B7-H1) and PD-L2, have been identified as PD-1 ligands (5, 6). PD-1 is expressed on activated T cells, B cells, myeloid cells, and on a subset of thymocytes. PD-1 deficient mice have a defect in peripheral tolerance and spontaneously develop autoimmune diseases. Binding of PD-1 to PD-L1 or PD-L2 results in the inhibition of TCR-mediated proliferation and cytokine production as well as BCR-mediated signaling. PD-1 likely has an inhibitory role in regulating immune responses (1-4).

References:

1. Ishida, Y. *et al.* (1992) EMBO J. **11**:3887.
2. Sharpe, A.H. and G.J. Freeman (2002) Nat. Rev. Immunol. **2**:116.
3. Coyle, A. and J. Gutierrez-Ramos (2001) Nat. Immunol. **2**:203.
4. Nishimura, H. and T. Honjo (2001) Trends Immunol. **22**:265.
5. Latchman Y. *et al.* (2001) Nat. Immun. **2**:261.
6. Tamura, H. *et al.* (2001) Blood **97**:1809.

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