

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse PD-1 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human PD-1 is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 766104
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse PD-1 Leu25-Gln167 Accession # Q02242
Conjugate	Allophycocyanin Excitation Wavelength: 620-650 nm Emission Wavelength: 660-670 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Flow Cytometry	10 µL/10 ⁶ cells	See Below

DATA

<p>Flow Cytometry</p> <p>Detection of PD-1 in Mouse Splenocytes by Flow Cytometry. Mouse splenocytes either (A) resting or (B) treated with µg/mL of PHA for 72 hours were stained with Rat Anti-Mouse PD-1 APC-conjugated Monoclonal Antibody (Catalog # FAB7738A, filled histogram) or isotype control antibody (Catalog # IC006A, open histogram). View our protocol for Staining Membrane-associated Proteins.</p>	<p>Flow Cytometry</p> <p>Detection of PD-1 in Mouse Thymocytes by Flow Cytometry. Mouse thymocytes gated on CD3⁺ CD8⁺ cells were stained with Rat Anti-Mouse CD4 Alexa Fluor® 405-conjugated Monoclonal Antibody (Catalog # FAB554V) and either (A) Rat Anti-Mouse PD-1 APC-conjugated Monoclonal Antibody (Catalog # FAB7738A) or (B) Rat IgG_{2A} Allophycocyanin Isotype Control (Catalog # IC006A). View our protocol for Staining Membrane-associated Proteins.</p>
--	--

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

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:

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