

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	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL 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	0.25-1 µg/10 ⁶ cells	Mouse splenocytes treated with PHA

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. ● 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:

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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