

## APC/Fire™ 810 anti-mouse CD279 (PD-1) Antibody

<b>Catalog# / Size</b>	135251 / 25 µg 135252 / 100 µg
<b>Clone</b>	29F.1A12
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	PD-1, Programmed Death-1
<b>Isotype</b>	Rat IgG2a, κ
<b>Description</b>	CD279, also known as programmed death-1 (PD-1), is a 50-55 kD glycoprotein belonging to the CD28 family of the Ig superfamily. PD-1 is expressed on activated splenic T and B cells and thymocytes. It is induced on activated myeloid cells as well. PD-1 is involved in lymphocyte clonal selection and peripheral tolerance through binding its ligands, B7-H1 (PD-L1) and B7-DC (PD-L2). It has been reported that PD-1 and PD-L1 interactions are critical to positive selection and play a role in shaping the T cell repertoire. PD-L1 negative costimulation is essential for prolonged survival of intratesticular islet allografts.

### Product Details

<b>Verified Reactivity</b>	Mouse
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Rat
<b>Immunogen</b>	PD-1 cDNA followed by PD-1-Ig fusion protein
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
<b>Preparation</b>	The antibody was purified by affinity chromatography and conjugated with APC/Fire™ 810 under optimal conditions.
<b>Concentration</b>	0.2 mg/mL
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">FC - Quality tested</a>
<b>Recommended Usage</b>	Each lot of this antibody is quality control tested by <a href="#">immunofluorescent staining with flow cytometric analysis</a> . For flow cytometric staining, the suggested use of this reagent is ≤ 0.25 µg per million cells in 100 µL volume. It is recommended that the reagent be titrated for optimal performance for each application.  * APC/Fire™ 810 has a maximum excitation of 650 nm and a maximum emission of 810 nm.  Excessive exposure to light, and commonly used fixation, permeabilization buffers can affect APC/Fire™ 810 fluorescence signal intensity and spread. Please keep conjugates protected from light exposure. For more information and representative data, visit our <a href="#">Fire Dyes</a> page.
<b>Excitation Laser</b>	Red Laser (633 nm)
<b>Application Notes</b>	Additional reported applications (for the relevant formats) include: immunohistochemical staining of acetone-fixed frozen tissue <sup>3</sup> , <i>in vivo</i> blocking of PD-1 binding to its ligands <sup>2,3</sup> , and spatial biology (IBEX) <sup>5,6</sup> .
<b>Application References</b>	<ol style="list-style-type: none"> <li>1. Good-Jacobson KL, <i>et al.</i> 2010. <i>Nat. Immunol.</i> 11:535. (FC) <a href="#">PubMed</a></li> <li>2. Lázár-Molnár E, <i>et al.</i> 2008. <i>Proc. Natl. Acad. Sci. USA</i> 105:2658. (Block)</li> <li>3. Liang SC, <i>et al.</i> 2003. <i>Eur. J. Immunol.</i> 33:2706. (FC, IHC, Block)</li> <li>4. Tobias J, <i>et al.</i> 2020. <i>Front Immunol.</i> 11:895 (FC, ELISA) <a href="#">PubMed</a></li> <li>5. Radtke AJ, <i>et al.</i> 2020. <i>Proc Natl Acad Sci U S A.</i> 117:33455-65. (SB) <a href="#">PubMed</a></li> <li>6. Radtke AJ, <i>et al.</i> 2022. <i>Nat Protoc.</i> 17:378-401. (SB) <a href="#">PubMed</a></li> </ol>

RRID

AB\_2910292 (BioLegend Cat. No. 135251)  
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## Antigen Details

<b>Structure</b>	A 50-55 kD glycoprotein belonging to the CD28 family of the Ig superfamily.
<b>Distribution</b>	Induced on splenic T and B lymphocytes, thymocytes, and myeloid cells after stimulation.
<b>Function</b>	Involved in lymphocyte clonal selection and peripheral tolerance, prolonged survival of allografts.
<b>Ligand/Receptor</b>	B7-H1 (PD-L1) and B7-DC (PD-L2)
<b>Cell Type</b>	B cells, T cells
<b>Biology Area</b>	Cancer Biomarkers, Immunology, Inhibitory Molecules
<b>Molecular Family</b>	CD Molecules, Immune Checkpoint Receptors
<b>Antigen References</b>	1. Nishimura H, <i>et al.</i> 2001. <i>Science</i> 291:319 2. Agata Y, <i>et al.</i> 1996. <i>Int. Immunol.</i> 8:765 3. Liang SC, <i>et al.</i> 2003. <i>Eur. J. Immunol.</i> 33:2706 4. Barber DL, <i>et al.</i> 2006. <i>Nature</i> 439:682 5. Keir ME, <i>et al.</i> 2005. <i>J. Immunol.</i> 175:7372 6. Koehn BH, <i>et al.</i> 2008. <i>J Immunol.</i> 181:5313
<b>Gene ID</b>	<a href="#">18566</a>

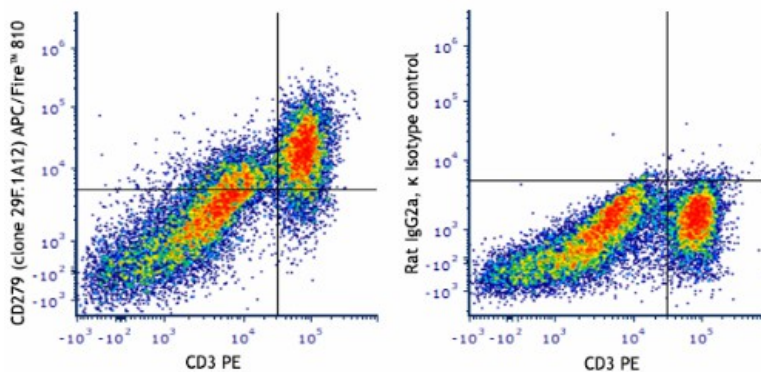
## Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

## Other Formats

PE anti-mouse CD279 (PD-1), Purified anti-mouse CD279 (PD-1), PerCP/Cyanine5.5 anti-mouse CD279 (PD-1), APC anti-mouse CD279 (PD-1), Biotin anti-mouse CD279 (PD-1), FITC anti-mouse CD279 (PD-1), PE/Cyanine7 anti-mouse CD279 (PD-1), Brilliant Violet 421™ anti-mouse CD279 (PD-1), Brilliant Violet 605™ anti-mouse CD279 (PD-1), APC/Cyanine7 anti-mouse CD279 (PD-1), Brilliant Violet 785™ anti-mouse CD279 (PD-1), PE/Dazzle™ 594 anti-mouse CD279 (PD-1), Alexa Fluor® 647 anti-mouse CD279 (PD-1), Brilliant Violet 711™ anti-mouse CD279 (PD-1), GolnVivo™ Purified anti-mouse CD279 (PD-1), APC/Fire™ 750 anti-mouse CD279 (PD-1), Brilliant Violet 510™ anti-mouse CD279 (PD-1), Ultra-LEAF™ Purified anti-mouse CD279 (PD-1), APC/Fire™ 810 anti-mouse CD279 (PD-1) Antibody, PE/Fire™ 810 anti-mouse CD279 (PD-1) Antibody, PE/Cyanine5 anti-mouse CD279 (PD-1)

## Product Data



Con-A and IL-2 stimulated C57BL/6 splenocytes (three days) were stained with anti-mouse CD3 PE and anti-mouse CD279 (PD-1) (clone 29F.1A12) APC/Fire™ 810 (left), or rat IgG2a, κ APC/Fire™ 810 isotype control (right).

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