

## Biotin Anti-Mouse CD274 (PD-L1) Antibody

|                           |                     |
|---------------------------|---------------------|
| <b>Catalog Number:</b>    | 201303, 201304      |
| <b>Size:</b>              | 25 ug, 100 ug       |
| <b>Target Name:</b>       | CD274, PD-L1, B7-H1 |
| <b>Regulatory Status:</b> | RUO                 |

### PRODUCT DETAILS

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| <b>Clone:</b>                 | 10F.9G2                                                                                                                                                                                                                                                                                      |
| <b>Application:</b>           | Flow Cytometry                                                                                                                                                                                                                                                                               |
| <b>Reactivity:</b>            | Mouse                                                                                                                                                                                                                                                                                        |
| <b>Format:</b>                | Biotin                                                                                                                                                                                                                                                                                       |
| <b>Isotype:</b>               | Rat IgG2b                                                                                                                                                                                                                                                                                    |
| <b>Antibody Type:</b>         | Monoclonal                                                                                                                                                                                                                                                                                   |
| <b>Formulation:</b>           | Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA                                                                                                                                                                                                        |
| <b>Protein Concentration:</b> | 0.2 mg/mL                                                                                                                                                                                                                                                                                    |
| <b>Storage and Handling:</b>  | The antibody solution should be stored between 2°C and 8°C                                                                                                                                                                                                                                   |
| <b>Recommended Usage:</b>     | For flow cytometric staining, it is recommended to use less than 0.1 µg of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. For detection, use a secondary reagent with this product. |
| <b>Isotype Control:</b>       | 300306                                                                                                                                                                                                                                                                                       |
| <b>RRID:</b>                  | AB_3739038                                                                                                                                                                                                                                                                                   |

### BACKGROUND INFORMATION

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Programmed death-ligand 1 (PD-L1), also known as CD274 or B7-H1, is a transmembrane protein that plays a pivotal role in immune regulation by modulating T cell activity. PD-L1 is expressed on a wide range of cells, including antigen-presenting cells, epithelial cells, and many tumor cells. Its primary function is to bind to its receptor, programmed cell death protein 1 (PD-1), located on activated T cells. This interaction delivers an inhibitory signal that reduces T cell proliferation, cytokine production, and cytotoxicity, thereby maintaining immune homeostasis and preventing autoimmunity. However, in pathological contexts such as cancer, PD-L1 expression allows tumor cells to evade immune attack, creating an immunosuppressive microenvironment.

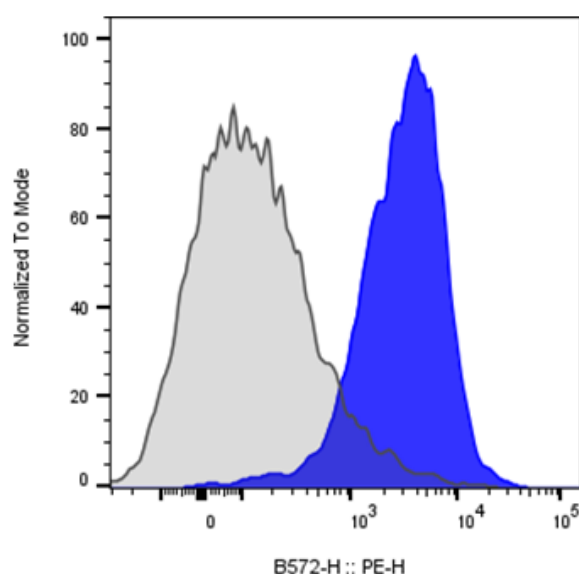
Structurally, PD-L1 is a type I transmembrane glycoprotein belonging to the B7 family of immune checkpoint molecules. The extracellular domain comprises two immunoglobulin-like regions—an IgV-like domain responsible for PD-1 binding and an IgC-like domain that stabilizes the molecule. The protein also contains a single transmembrane helix and a short cytoplasmic tail that lacks classical signaling motifs but may interact with intracellular partners influencing its stability and localization. The PD-L1-PD-1 complex adopts a well-characterized interface where the IgV domains of both molecules interact in a way that blocks T cell receptor-mediated activation signaling.

The main ligands of PD-L1 are PD-1 and CD80 (B7-1). While PD-1 engagement results in T cell inhibition, interaction with CD80 may yield bidirectional signaling effects depending on the cellular context. PD-L1 can be induced by inflammatory cytokines such as interferon-gamma (IFN- $\gamma$ ), linking innate immune responses to immune checkpoint modulation.

PD-L1 plays a major role in numerous diseases. Overexpression of PD-L1 is a hallmark of many cancers, including lung, melanoma, renal, and breast cancers, where it contributes to immune escape. Therapeutically, blocking the PD-1/PD-L1 axis with immune checkpoint inhibitors has revolutionized cancer treatment. Drugs such as pembrolizumab, nivolumab, and atezolizumab disrupt this inhibitory pathway, restoring antitumor T cell function. Moreover, PD-L1 is being explored as both a predictive biomarker for immunotherapy response and a target for novel therapies, including bispecific antibodies and CAR-T cells aimed at enhancing immune-mediated tumor clearance.

## PRODUCT DATA

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Mouse splenocytes stained with either biotinylated anti-Mouse PD-L1 clone 10F.9G2 (blue histogram) or an isotype control (gray histogram), followed by SA-PE.

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