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# Human PD-L1 (CD274) Protein (C-Fc-Avi)

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|---|---|
| **Catalog Number:** | 801001, 801002 |
| **Size:** | 25 ug, 100 ug |
| **Target Name:** | PD-L1, CD274, B7-H1, PDCD1L1, PDCD1LG1, |
| **Regulatory Status:** | RUO |

## PRODUCT DETAILS

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| **Application:** | ELISA, BLI |
| **Format:** | Liquid, Purified |
| **Expression Host:** | HEK293 |
| **Species:** | Human |
| **Sources:** | Recombinant Human PD-L1 (Phe19-Thr239) with C-terminus Fc-Avi tag is expressed in HEK293 cells. |
| **Accession Number:** | Q9NZQ7 |
| **Molecular Weight:** | The protein has a predicted molecular weight of 54 kDa and migrates at approximately 70 kDa on SDS-PAGE under DTT-reducing conditions. |
| **Affinity Tag:** | C-Fc-Avi |
| **Purity:** | >95% based on SDS-PAGE under reducing condition |
| **Formulation:** | 1xPBS buffer, pH7.4, 0.22 μm filtered |
| **Endotoxin level:** | Not tested |
| **Protein Concentration:** | 25μg size is bottled at 0.2mg/mL concentration. 100 μg size is supplied at a lot-specific concentration. |
| **Storage and Handling:** | Briefly centrifuge the vial upon receipt. An unopened vial can be stored at 4°C for up to 2 weeks, or at -20°C or below for up to six months. The protein may be further diluted to 0.1 mg/mL using 0.22 μm-filtered PBS buffer (pH 7.4). For long-term storage, the diluted stock solution should be aliquoted and stored at ≤ –70°C to minimize freeze-thaw cycles. If additional dilution is required, carrier proteins such as FBS or BSA should be added to maintain protein stability. |

## BACKGROUND INFORMATION

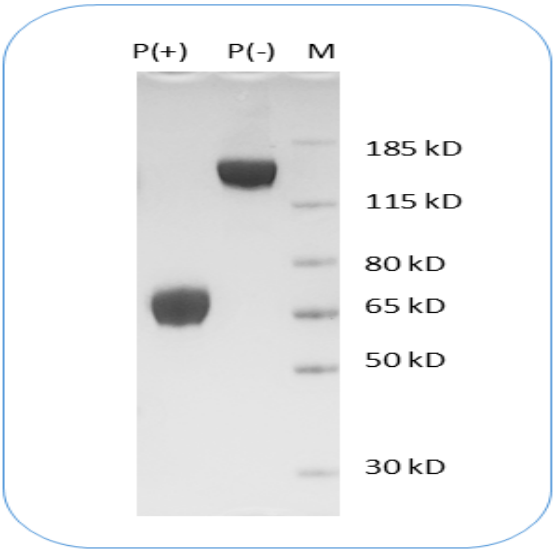
Programmed death-ligand 1 (PD-L1), also known as CD274 or B7-H1, is a transmembrane protein that plays a pivotal role in immune regulation by modulating T cell activity. PD-L1 is expressed on a wide range of cells, including antigen-presenting cells, epithelial cells, and many tumor cells. Its primary 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-γ), 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




Human PD-L1 Protein (C-Fc-Avi) on SDS-PAGE under reducing condition. The gel was stained for 1 hour with BlinkBlue (catalog 700102). The purity of this protein appears to be greater than 95%.

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