

# Humanized PD-L1 Mouse

Strain Name: C57BL/6-*Cd274<sup>em1(hPD-L1)/Smoc</sup>*

Strain Background: C57BL/6

Cat. No. : IT-HU-00062

Programmed cell death 1 ligand (PD-L1), also known as cluster of differentiation 274 (CD274) or B7 homolog 1 (B7H1), is a 40 kDa transmembrane protein encoded by the gene CD274 in human. The binding of PD-L1 to the PD-1 receptors expressed on the surface of activated T cells transmits a negative regulatory signal. While under normal circumstances the PD-L1 pathway acts as a type of "off switch" that helps keep the T cells from attacking other cells, the high expression level of PD-L1 in the tumor microenvironment inhibits the function of tumor-infiltrating T cells, thereby allowing tumor cells to escape immune surveillance.

## Construction strategy

On the C57BL/6 background, the full-length coding sequence of human CD274 gene was placed immediately downstream of the start codon of the mouse endogenous *Cd274* gene, followed by a poly(A) site. This guarantees an exclusive expression of human PD-L1 in the humanized PD-L1 mice.

## Validation data

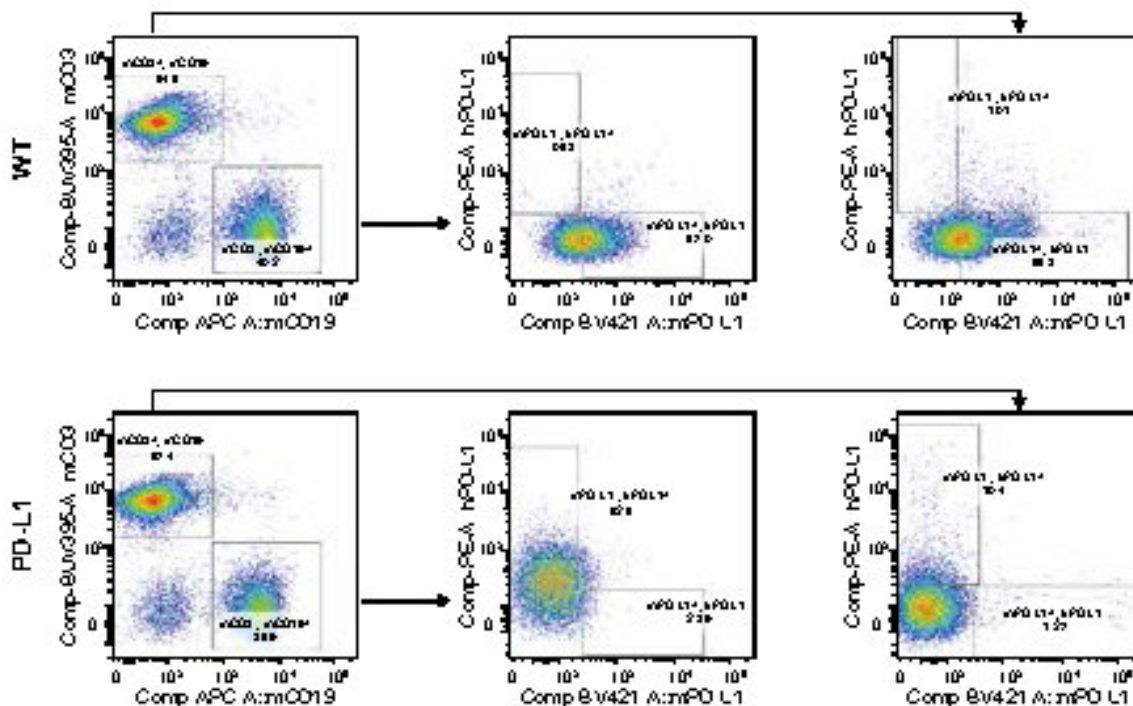
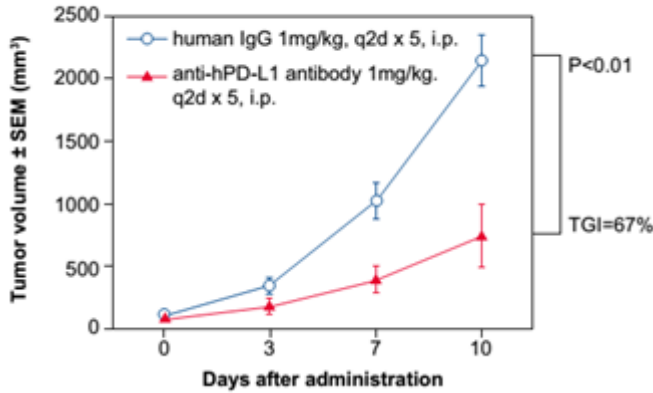


Figure 1. Expression of PD-L1 in the spleen lymphocytes collected from homozygous humanized PD-L1 mice and wild-type mice is detected by FACS. The results showed that the expression of human PD-L1 can be detected in both T cells and B cells collected from the spleen of homozygous humanized PD-L1 mice. (Completed in collaboration with CrownBio)

### PD-L1 antibody anti-tumor efficacy validation



### Body weight changes in anti-tumor validation

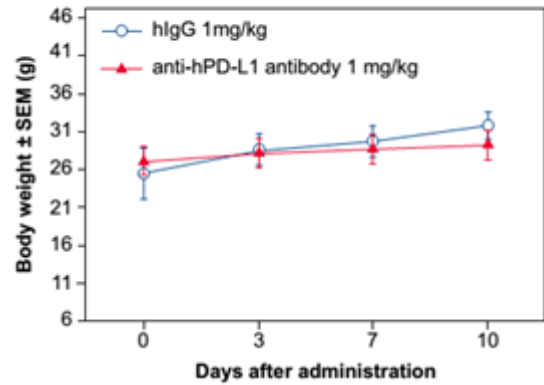


Figure 2. In vivo validation of anti-tumor efficacy in a MC38 tumor-bearing model of humanized PD-L1 mice. Homozygous humanized PD-L1 mice were inoculated with MC38 colon cancer cells (expressing human PDL1 rather than murine PD-L1). After the tumors grew to 100 mm<sup>3</sup>, the animals were randomly assigned into a control group and a treatment group (n=5). The results showed: The antibodies targeting human PD-L1 were associated with a very significant anti-tumor effect (TGI: tumor growth inhibition,  $p < 0.001$ ), demonstrating that the humanized PD-L1 mice are a good in vivo model for validating the efficacy of antibodies targeting human PD-L1.

# Immune Checkpoint Humanized Mouse Models

Being recognized as a top scientific breakthrough in 2013, cancer immunotherapy is predicted to be one of the most promising research areas for improving patient outcomes. Although many immunotherapy breakthroughs may still lie ahead, important clinical advances have been made in the past few years for some of the deadliest cancers, reaffirming the potential of immunotherapy for many types of patients.

However, it is worth noting that drug candidates developed to interfere with human proteins may not comparably interact with their murine counterparts. It is therefore critical to develop humanized mouse models to enable in vivo efficacy evaluation of cancer immunotherapies.

## Immune Checkpoint Humanized Mouse Models available at ingenious targeting laboratory

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<i>4-1BB</i>	<i>PD-1/PD-L1</i>
<i>CD40</i>	<i>PD-1/TIGIT</i>
<i>CD47</i>	<i>PD-1/TIM3</i>
<i>CD73 (NT5E)</i>	<i>PD-L1</i>
<i>CTLA4 (C57BL/6)</i>	<i>PD-L1/CTLA4</i>
<i>CTLA4 (BALB/c)</i>	<i>PD-L1/LAG3</i>
<i>KDR</i>	<i>PD-L1/OX40</i>
<i>LAG3</i>	<i>PD-L1/TIGIT</i>
<i>OX40</i>	<i>SIRPA</i>
<i>OX40/CTLA4</i>	<i>SIRPA/CD47</i>
<i>PD-1 (C57BL/6)</i>	<i>TIGIT</i>
<i>PD-1 (BALB/c)</i>	<i>TIM3 (C57BL/6)</i>
<i>PD-1/4-1BB</i>	<i>TIM3 (BALB/c)</i>
<i>PD-1/CD40</i>	<i>TNFRSF1B</i>
<i>PD-1/CTLA4</i>	<b><i>And more to come!</i></b>
<i>PD-1/LAG3</i>	
<i>PD-1/OX40</i>	

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To get to know more about these models, visit our website [www.genetargeting.com](http://www.genetargeting.com)  
or contact our scientific experts at [inquiry@genetargeting.com](mailto:inquiry@genetargeting.com)

# About ingenious targeting laboratory

ingenious targeting laboratory (**ingenious**) has been a leading global provider of custom genetically modified mouse, rat, and rabbit models for over 20 years. As one of the very first mouse gene targeting companies, our trusted service is built on two decades' worth of successful animal model creation for investigators, organizations, and companies worldwide. Our models have been published in hundreds of journals including *Science*, *Nature*, and *Cell*, making us one of the most validated and respected production companies in the industry. We are excited to add catalog mouse models to our service repertoire by means of our collaboration with Shanghai Model Organisms Center (SMOC).

## ingenious targeting laboratory

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