

Description

PD-L1 Lentiviruses are replication incompetent, HIV-based, VSV-G pseudotyped lentiviral particles ready to transduce nearly all types of mammalian cells, including primary and non-dividing cells. These viruses contain human PD-L1 (programmed death ligand 1) (NM_014143.4) driven by an EF1a promoter and a geneticin selection marker (Figure 1).

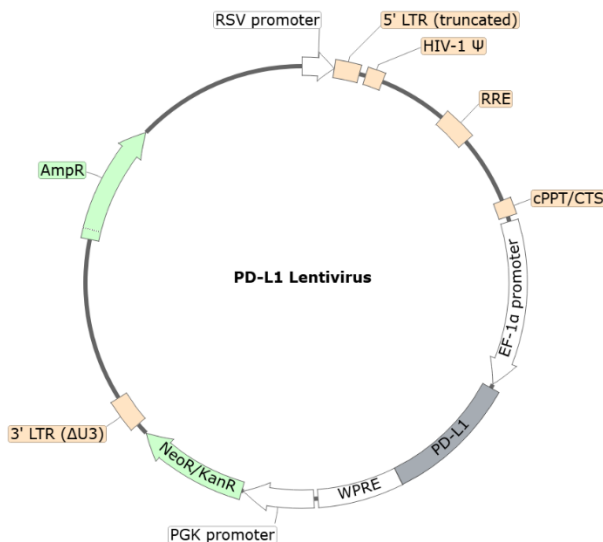


Figure 1. Schematic of the lenti-vector used to generate the PD-L1 Lentivirus.

Background

The binding of Programmed Cell Death Protein 1 (PD-1), a receptor expressed on activated T cells, to its ligands, PD-L1 and PD-L2, negatively regulates immune responses. PD-1 ligands are found in most cancers, and PD-1:PD-L1/2 interaction inhibits T cell activity and allows cancer cells to escape immune surveillance. The PD-1:PD-L1/2 pathway is also involved in regulating autoimmune responses, making these proteins promising therapeutic targets for a number of cancers, as well as multiple sclerosis, arthritis, lupus, and type I diabetes.

Application(s)

- Expression of human PD-L1 in cells of interest.
- Generate cell pools or stable cell lines expressing human PD-L1 following geneticin selection.

Formulation

The lentivirus particles were produced in HEK293T cells in medium containing 90% DMEM + 10% FBS. Virus particles can be packaged in custom formulations by special request, for an additional fee.

Size and Titer

Two vials (500 μ l x 2) of lentivirus at a titer $\geq 10^7$ TU/ml. The titer will vary with each lot; the exact value is provided with each shipment.

Storage



Lentiviruses are shipped with dry ice. For long-term storage, it is recommended to store the lentiviruses at -80°C . Avoid repeated freeze-thaw cycles. Titers can drop significantly with each freeze-thaw cycle.

Biosafety



The lentiviruses are produced with a SIN (self-inactivation) lentivector which ensures self-inactivation of the lentiviral construct after transduction and after integration into the genomic DNA of the target cells. None of the HIV genes (*gag*, *pol*, *rev*) will be expressed in the transduced cells, as they are expressed from packaging plasmids lacking the packing signal and are not present in the lentivirus particle. Although the pseudotyped lentiviruses are replication-incompetent, they require the use of a Biosafety Level 2 facility. BPS Bioscience recommends following all local federal, state, and institutional regulations and using all appropriate safety precautions.

Notes

To generate a PD-L1 stable cell line, remove the growth medium 48 hours after transduction and replace it with fresh growth medium containing the appropriate amount of geneticin (as pre-determined from a killing curve, <https://bpsbioscience.com/cell-line-faq>), for antibiotic selection of transduced cells, following by clonal selection.

Figures and Validation Data

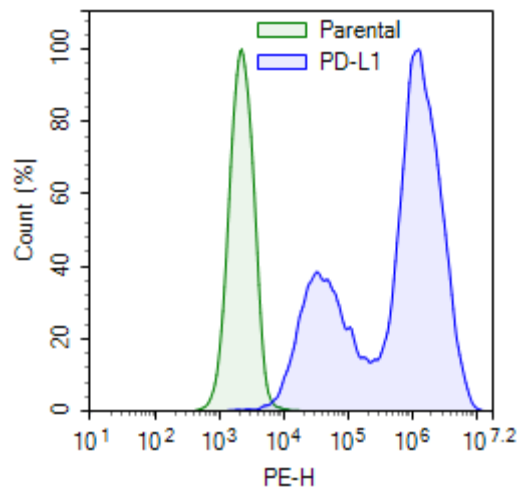


Figure 2. Expression of human PD-L1 in HEK cells transduced with PD-L1 lentiviruses.

The human PD-L1 HEK293 cell pool was generated by transduction of HEK293 cells with PD-L1 lentiviruses at a MOI of 10. After 66 hours of transduction, transduced (blue) and control (green) HEK293 cells and were stained with PE anti-human PD-L1 Antibody (Biolegend #329706) and analyzed by flow cytometry.

Sequence

Human PD-L1 sequence (accession number NM_014143.4)

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MRIFAVFIFMTYWHLNNAFTVTVPKDLYVVEYGSNMTIECKFPVEKQLDLAALIVYWEMEDKNIIQFVHGEECLKVQHSSYRQRA
RLLKDQLSLGNAALQITDVKLQDAGVYRCMISYGGADYKRITVKVNAPYNKINQRILVVDPTSEHELTCQAEGYPKAEVIWTSSD
HQVLSGKTTTTNSKREEKLFNVTSTLRINTTTNEIFYCTFRRLDPEENHTAELVPELPLAHPNERTHLVILGAILLCLGVALTFIFRLR
KGRMMDVKKCGIQDTNSKKQSDTHLEET
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Troubleshooting Guide

Visit bpsbioscience.com/lentivirus-faq for detailed troubleshooting instructions. For further questions, please email support@bpsbioscience.com.

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
PD-L1 CRISPR/Cas9 Lentivirus (Integrating)	78057	500 µl x 2
PD-L1 CRISPR/Cas9 Lentivirus (Non-Integrating)	78064	500 µl x 2
Anti-PD-L1 Antibody, PE-labeled	71128	50 µg/100 µg
Anti-PD-L1 (CD274) Neutralizing Antibody	71213	100 µg
PD-1 :PD-L1/PD-L2 Cell-Based Inhibitor Screening Assay Kit	60800	96 reactions