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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Description

The PD-1 Lentivirus are replication incompetent, HIV-based, VSV-G pseudotyped lentiviral particles ready to transduce almost all types of mammalian cells, including primary and non-dividing cells. These viruses transduce cells with human PD-1 (Programmed Death Protein 1) (NM_005018.3) driven by a CMV promoter. The lentiviruses also transduce a Blasticidin (BSD) selection marker (Figure 1).

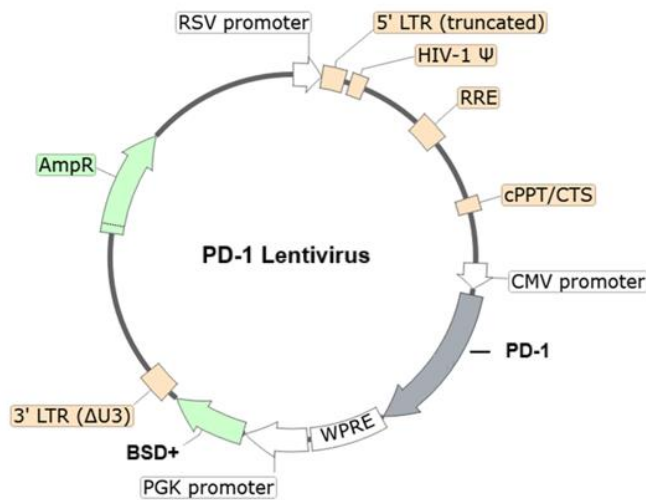


Figure 1. Schematic of the lenti-vector used to generate human PD-1 Lentivirus.

Background

PD-1 (Programmed Death Protein 1, CD279) is a transmembrane protein expressed on the surface of immune cells that binds to PD-L1 or PD-L2, inducing apoptosis of T cells and inhibiting immune responses. Cancer cells often overexpress PD-L1 or PD-L2, allowing them to suppress T cell activation, evade the host immune response, and proliferate. Thus, disrupting the PD-1 co-inhibitory pathways may be an effective approach to developing anti-cancer therapies, as well as other immune diseases like multiple sclerosis, arthritis, lupus, and type I diabetes. The overexpression of PD-1 in this cell line allows for the study of PD-1 antibodies and other novel therapeutics.

Application(s)

- Expression of human PD-1 in cells of interest.
- Generate PD-1-expressing cell pools or stable cell lines following Blasticidin 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.

Titer

Two vials (500 μl 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 for up to 12 months from date of receipt. 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-1 stable cell line, remove the growth medium 48 hours after transduction and replace it with fresh growth medium containing the appropriate amount of Blasticidin ((as pre-determined from a killing curve, <https://bpsbioscience.com/kill-curve-protocol>), for antibiotic selection of transduced cells followed by clonal selection.

Figures and Validation Data

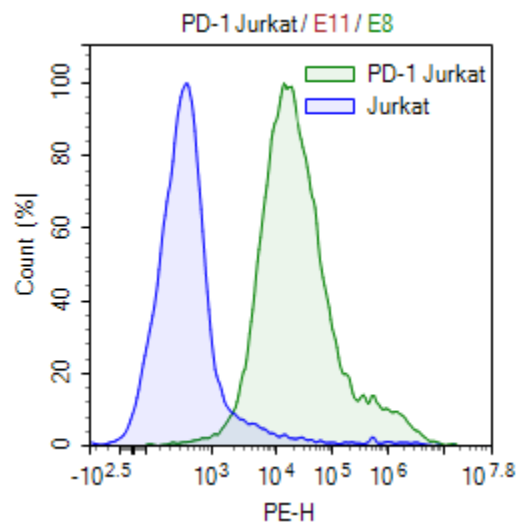


Figure 2. Expression of human PD-1 in Jurkat cells transduced with human PD-1 Lentivirus.

Approximately 100,000 Jurkat cells were transduced with 1,000,000 TU of human PD-1 Lentivirus. 48 hours post-transduction, the cells were stained with Anti-PD-1 Neutralizing Antibody, PE-labeled (#71290) and analyzed by flow cytometry. Blue, parental Jurkat cells; Green, Jurkat cells transduced with PD-1 Lentivirus. Y-axis represents the % cell number. X-axis indicates PE intensity.

Sequence

Human PD-1 sequence (NM_005018.3)

MQIPQAPWPVVWAVLQLGWRPGWFLDSPDRPWNPTTFSPALLVVTEGDNATFTCSFSNTSESVLWYRMSPSNQTDKLA
FPEDRSQPGQDCRFRVTQLPNGRDFHMSVVRARRRNDSTYLCGAISLAPKAQIKESLRAELRVTERRAEVPTAHPSPSPRPAQGF

QTLVVGVVGGLLGSLVLLVWVLAVICSRAARGTIGARRTGQPLKEDPSAVPVFSVDYGELDFQWREKTPEPPVPCVPEQTEYATI
VFPSGMGTSSPARRGSADGPRSAQPLRPEDGHCSWPL

References

Han Y., *et al.*, 2020 *Am J Cancer Res* 10(3): 727-742.

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 Lentivirus	78925	500 µl x2
PD-1 CHO Cell Line	78530	2 vials
PD-1 – HEK293 Recombinant Cell Line	60680	2 vials
Anti-PD-1 Neutralizing Antibody	71120	100 µg
PD-1:PD-L1 TR-FRET Assay	72038	384 reactions

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