

Description

The GPC3 Lentiviruses are replication incompetent, HIV-based, VSV-G pseudotyped lentiviral particles that are ready to transduce nearly all types of mammalian cells, including primary and non-dividing cells. The particles contain a human GPC3 (Glypican 3, NM_004484.2) driven by an EF1a promoter and a puromycin selection marker (Figure 1).

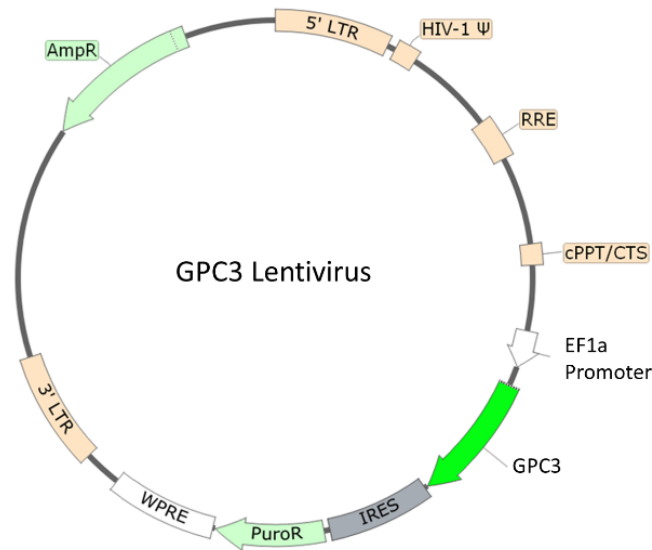


Figure 1: Schematic of the lenti-vector used to generate the GPC3 Lentivirus.

Background

GPC3 (Glypican-3, also known as OCI5) is a cell surface proteoglycan highly expressed in the lungs, liver, and kidneys. Its function is tissue-dependent and can either promote or suppress tumorigenesis. Being a heparin sulfate proteoglycan, it is overexpressed in neoplasms including malignant melanoma, hepatocellular carcinoma, and testicular yolk sac tumors in which it regulates cell growth and differentiation. It is also involved in the negative regulation of the hedgehog signaling pathway and in the positive regulation of the non-canonical Wnt signaling pathway.

Application(s)

Generate stable cell line expressing human GPC3 with puromycin selection

Formulation

The lentivirus particles were produced from HEK293T cells. They are supplied in cell culture medium containing 90% DMEM + 10% FBS.

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. Titters can drop significantly with each freeze/thaw cycle.

Biosafety

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 GPC3 stable cell line, remove the growth medium 48 hours after transduction and replace it with fresh growth medium containing the appropriate amount of puromycin (as pre-determined from a killing curve) for antibiotics selection of transduced cells. Visit: <https://bpsbioscience.com/cell-line-faq> for guidelines on performing a kill curve.

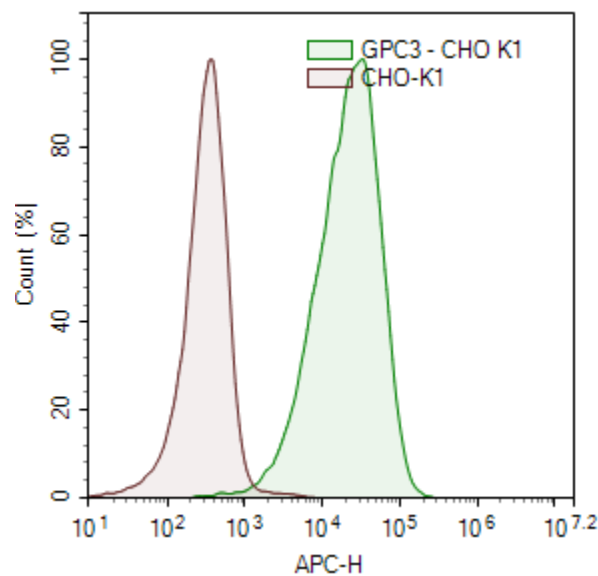
Figures and Validation Data

Figure 2. Generation of a stable GPC3 CHO-K1 cell line using GPC3 lentivirus.

The GPC3 CHO stable cell line was generated by transduction of CHO-K1 cells with GPC3 lentivirus, followed by selection of a clonal cell line that has integrated GPC3 into the chromosome. The expression of human GPC3 was analyzed by flow cytometry using APC-conjugated Anti-GPC3 Antibody (R&D systems, #FAB2119A).

Sequence

Human GPC3 (Glypican 3) sequence (accession number NM_004484.2)

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MAGTVRTACLVVAMLLSLDFPGQAQPPPPPDATCHQVRSFFQRLQPGLKWWPETPVPGSDLQVCLPKGPTCCSRKMEEKYQL
TARLNMEQLLQASAMELKFLIIQNAAVFQEAFAEIVVRHAKNYTNAMFKNNYPSLTPQAFEFVGEFFTDVSLYILGSDINVDMMVN
ELFDSLFPVIYTQLMNPGLPDSALDINECLRGAARRDLKVFGNFPKLIQTQVSKSLQVTRIFLQALNLGIEVINTTDHLKFSKDCGRML
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ELVERYSQKAARNGMKNQFNLHELKMKGPEPVVSQIIDKCLKHINQLLRTMSMPKGRVLDKNLDEEGFESGDCGDEDECIGGS
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Troubleshooting Guide

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

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
Trop2 Lentivirus	78710	500 µl x 2
Nectin-4 Lentivirus	78712	500 µl x 2
BCMA Lentivirus	78714	500 µl x 2
FcRL5 Lentivirus	78715	500 µl x 2
GPRC5D Lentiviruses	78716	500 µl x 2
Claudin-9 Lentivirus	78721	500 µl x 2
Claudin-3 Lentivirus	78722	500 µl x 2
Claudin-4 Lentivirus	78723	500 µl x 2
LYPD1 Lentivirus	78724	500 µl x 2
PSMA Lentivirus	78726	500 µl x 2