Description

The NKp46 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 NKp46 (NM_004829.7) driven by an EF1A promoter and a puromycin selection marker (Figure 1).

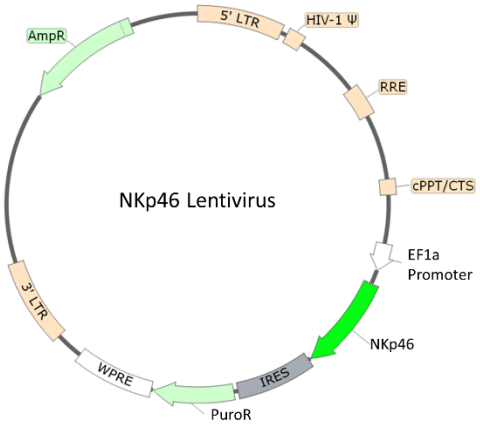

Figure 1: Schematic of the lenti-vector used to generate the NKp46 Lentivirus.

Background

NKp46 is an important NK-activating receptor expressed on the surface of human NK cells that is involved in natural cytotoxicity. NKp46 participates in the activation of NK cells against pathogens, tumor cells, and virally infected cells; it also plays an important role in autoimmune conditions, including type I and II diabetes. NKp46 expression is often conserved on infiltrating NK cells in most solid tumors, and NKp46 is also a diagnostic biomarker and possible therapeutic target for gastrointestinal T-cell lymphoproliferative diseases.

Application(s)

Generate a stable cell line expressing human NKp46 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 µl x 2) of lentivirus at a titer ≥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

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 NKp46 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 antibiotic selection of transduced cells. Visit: https://bpsbioscience.com/cell-line-faq for guidelines on performing a kill curve.

Validation Data

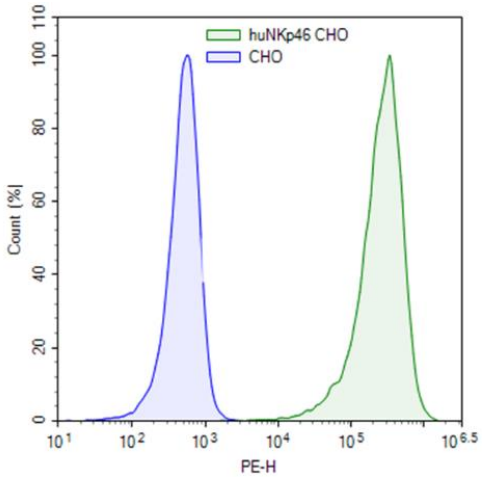

Figure 2: Transduction of CHO-K1 using NKp46 Lentivirus.
Approximately 50,000 CHO-K1 cells were transduced with 500,000 TU of NKp46 lentivirus. After 66 hours of transduction, the cells were selected with 5 µg/ml of puromycin. The puromycin-resistant cell pool was stained PE anti-human CD335 (NKp46) Antibody (Biolegend #331908) and analyzed by flow cytometry.

Sequence

Human NKp46 (NM_004829.7)
MSSTLPALLCVGLCLSQRISAQQQTLPKPFIWAEPHFMVPKEKQVTICCQGNYGAVEYQLHFEGSLFAVDRPKPPERINKVQFYIP
DMNSRMAGQYSCIYRVGELWSEPSNLLDLVVTEMYDTPTLSVHPGPEVISGEKVTFYCRLDTATSMFLLLKEGRSSHVQRGYGKV
QAEFPLGPVTTAHRGTYRCFGSYNNHAWSFPSEPVKLLVTGDIENTSLAPEDPTFPADTWGTYLLTTETGLQKDHALWDHTAQN
LLRMGLAFLVLVALVWFLVEDWLSRKRTRERASRASTWEGRRRLNTQTL

Troubleshooting Guide

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

Related Products

Products	Catalog #	Size
NKp46, Fc-fusion (IgG1), Avi-Tag Recombinant	100465	100 µg
NKp46, Fc-fusion (IgG1), Avi-Tag, Biotin-labeled Recombinant	100466	25 µg, 50 µg