

Description

The NKp46 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 transduce cells with *Macaca fascicularis* (also known as crab-eating macaque or cynomolgus monkey) NKp46 (Q95JB9.1) driven by an EF1A promoter. The lentiviruses also transduce a puromycin selection gene (Figure 1).

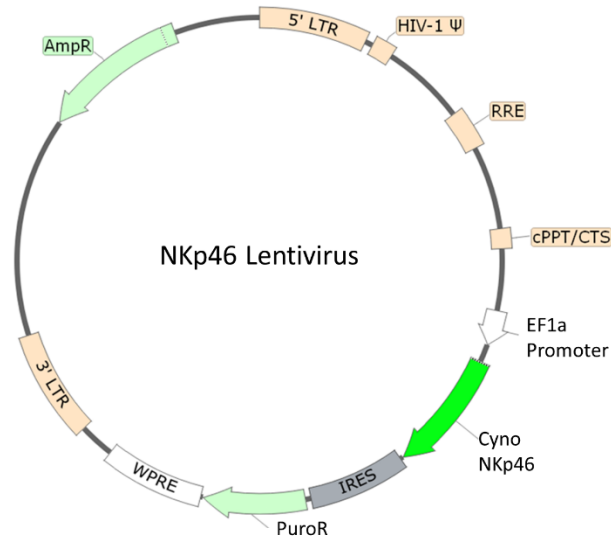


Figure 1: Schematic of the lenti-vector used to generate the cynomolgus NKp46 Lentivirus.

Background

NKp46 (also known as Natural Cytotoxicity Triggering Receptor 1, NCR1, and CD335) is an important NK-activating receptor expressed on the surface of human NK (natural killer) cells, involved in cellular 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. NKp46 expression level can be used as a prognostic tool in acute myeloid leukemia (AML). Due to its crucial role in NK cell activity NKp46 has been used in multiple therapeutical approaches, such as trifunctional NK cell engagers (combined with CD16 and a cancer target) and strategies aimed at increasing NKp46 expression to generate higher NK cell-mediated cytotoxicity.

Application(s)

- Expression of NKp46 in cells of interest.
- Generate stable cell lines expressing cynomolgus NKp46 (puromycin resistant).

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

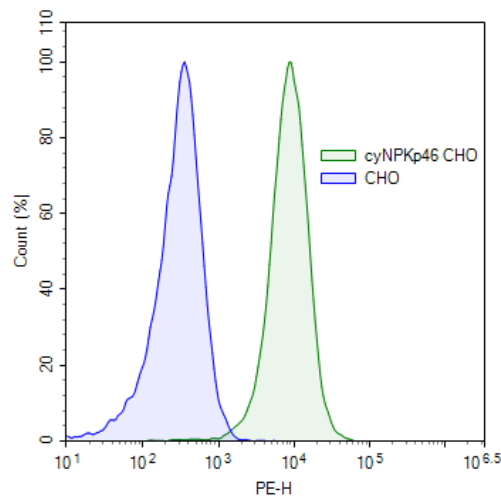
Figures and Validation Data

Figure 2. Expression of NKp46 CHO-K1 cells using cynomolgus NKp46 lentivirus.

CHO-K1 cells were transduced with cynomolgus NKp46 Lentivirus. 66 hours post-transduction, cells were selected with puromycin. The puromycin-resistant cell pool was stained with PE anti-human CD335 (NKp46) Antibody (BECKMAN #IM3711) and the expression of cynoNKp46 was analyzed by flow cytometry (green). Non-transduced CHO K1 cells were used as negative control (blue).

Sequence

Cynomolgus NKp46 sequence (accession number Q95JB9.1)

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MSSTLRALLCLGLCLSQRISAPKQTLPKPIIRAESTYMVPKEKQATLCCQGSYGAVEYQLHFEGSLFAVERPKPPERINGVKFHIPD
MNSRKAGRYSCIYRVGELWRSERDLDLVVTEMYDPTLSVHPGPEVTSGEKVTFYCRLDATATSMFLLKKEGRSRDVQRSYGKVVQ
AEFPMGPVTTAHRGSYRCFGSYNNYAWSPFPSEPVKLLVTGDIENSLAPTDPFPDSWDTCLLTRETGLQKDLALWDHTAQNLL
RMGLAFLVLVALVCLLVEDWLSRKRTREQASRASTWEGRRRLNKHKDSEE
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Troubleshooting Guide

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

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
NKp46 Lentivirus	78717	500 µl x 2
NKp46, Fc-fusion (IgG1), Avi-Tag Recombinant	100465	25 µg/100 µg
NKp46, Fc-fusion (IgG1), Avi-Tag, Biotin-Labeled Recombinant	100466	25 µg/100 µg
FcRL5 Lentivirus	78715	500 µl x 2
GPRC5D Lentiviruses	78716	500 µl x 2
PSMA Lentivirus	78726	500 µl x 2