

Description

The GPRC5D (G protein-coupled receptor class C group 5 member D) 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 particles *Macaca fascicularis* (also known as crab-eating macaque or cynomolgus monkey) GPRC5D (XP_005570250.1) driven by a CMV promoter. The lentiviruses also transduce a hygromycin selection gene (Figure 1).

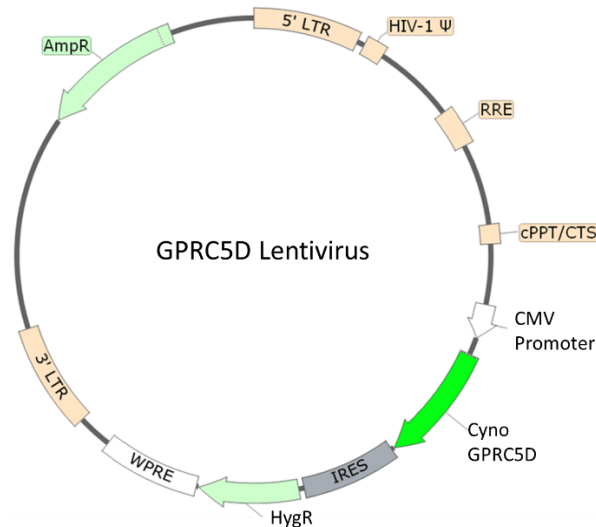


Figure 1: Schematic of the lenti-vector used to generate the cynomolgus GPRC5D Lentivirus.

Background

G protein-coupled receptor class C group 5 member D (GPRC5D) is an orphan receptor of little-known function belonging to the large family of G protein-coupled receptors. The protein is highly expressed in malignant plasma cells such as multiple myeloma and is now considered a therapeutic target for antibody-based treatment of multiple myeloma. For example, CAR-T cells and GPCR5DxCD3 bispecific antibodies resulted in promising outcomes at levels well tolerated by the patients.

Application(s)

- Expression of GPRC5D in cells of interest.
- Generate stable cell lines expressing cynomolgus GPRC5D (hygromycin 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 GPRC5D stable cell line, remove the growth medium 48 hours after transduction and replace it with fresh growth medium containing the appropriate amount of hygromycin (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.

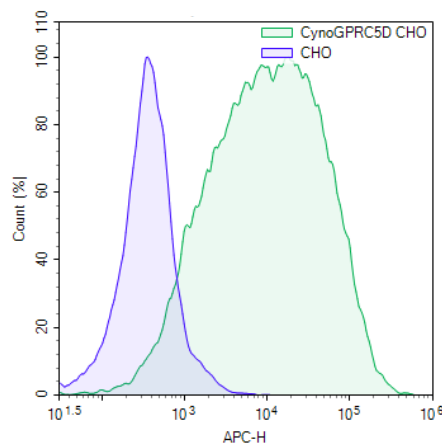
Figures and Validation Data

Figure 2. Expression of GPRC5D in CHO-K1 cells using cynomolgus GPRC5D lentivirus.

CHO-K1 cells were transduced with cynomolgus GPRC5D Lentivirus. 66 hours post-transduction, the cells were selected with hygromycin. The hygromycin-resistant cell pool was stained with GPRC5D APC-conjugated anti-GPRC5D Antibody (R&D system #FAB6300A), and the expression of GPRC5D was analyzed by flow cytometry (green). Non-transduced CHO K1 cells were used as negative control (blue).

Sequence

Cynomolgus GPRC5D sequence (accession number XP_005570250.1)

```
MYKDCIESTGDYFLPCDSEGPWGIVLES LA ILGIVVTILLLLAFLFLMRKIQDCSQWNVLPTQLLFLLSVLGLFGLAF AFIIQLNQQT A
PVRYFLFGVLFALCFSCLLAHASNLV KLVRGRVSFSWTTILCIAIGCSLLQVIAIEYVTLIMTRGMMFVHMTPYQLNVD FVLLVYV
LFLMALTFVFSKATFCGCPENWKQHGR LIFITVLF SIIIWVWVISM LRLRGNPQFQRQPQWDDP VVCIALVTNAWV FLLLYIVPELCI
LYRSCRQECPSQGHACPVTAYQRSFQVENQELSRDC
```

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>
GPRC5D CHO Cell Line	78337	2 vials
GPRC5D (Cynomolgus) CHO Cell Line	78338	2 vials
GPRC5D HEK Cell Line	78345	2 vials
GPRC5D (Cynomolgus) HEK Cell Line	78746	2 vials
GPRC5D Lentivirus	78716	500 µl x 2
LYPD1 Lentivirus	78724	500 µl x 2
PSMA Lentivirus	78726	500 µl x 2