

### Description

The BCMA 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 BCMA (NM\_001192) driven by a CMV promoter and a G418 selection marker (Figure 1).

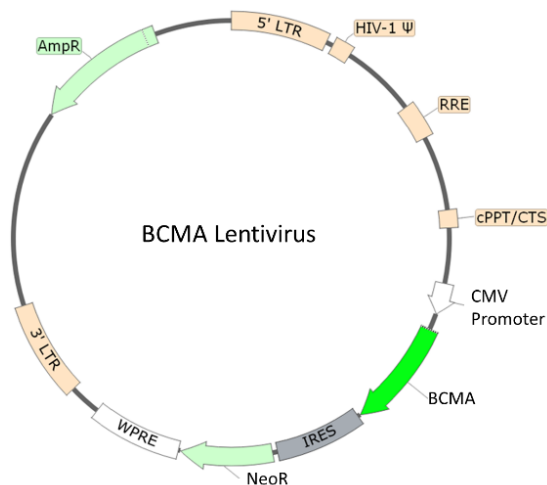


Figure 1: Schematic of the lenti-vector used to generate the BCMA Lentivirus

### Background

B-cell maturation antigen (BCMA, also known as CD269 or tumor necrosis factor receptor superfamily member 17, TNFRSF17), is a cell surface receptor of the TNF receptor superfamily that recognizes B-cell activating factor (BAFF). BCMA is preferentially expressed in mature B lymphocytes and also on Multiple Myeloma (MM) cells. BCMA is a highly attractive target antigen for immunotherapy because of its restricted expression in non-malignant tissue but almost universal expression on MM cells. CAR T cells targeting BCMA have clinical anti-MM activity, and in 2017, the FDA granted BCMA CAR T-Cell immunotherapy breakthrough designation in Multiple Myeloma.

### Application(s)

Generate a stable cell line expressing human BCMA with G418 selection and limiting dilution

### 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  $\mu$ 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  $-80^{\circ}\text{C}$ . Avoid repeated freeze/thaw cycles. Titers can drop significantly with each freeze/thaw cycle.

## Biosafety

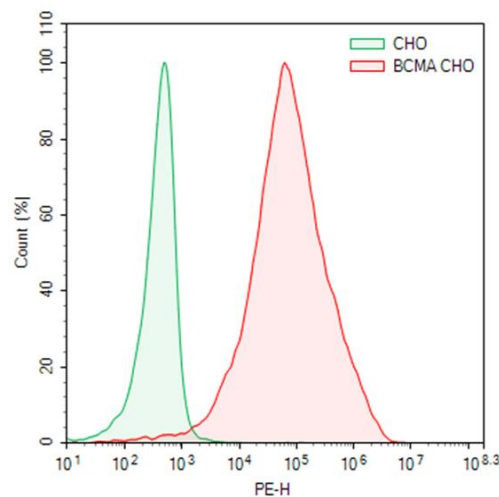


None of the HIV genes (gag, pol, rev) will be expressed in the transduced cells, as they are expressed from packaging plasmids lacking the packing signal and are not present in the lentivirus particle. Although the pseudotyped lentiviruses are replication-incompetent, they require the use of a Biosafety Level 2 facility. BPS Bioscience recommends following all local federal, state, and institutional regulations and using all appropriate safety precautions.

## Notes

To generate a BCMA stable cell line, remove the growth medium 48 hours after transduction and replace it with fresh growth medium containing the appropriate amount of G418 (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. Transduction of CHO-K1 using BCMA Lentivirus.*

Approximately 50,000 CHO-K1 cells were transduced with 500,000 TU of BCMA lentiviruses. After 66 hours of transduction, the cells were selected with 1 mg/ml G418. The G418-resistant cell pool was stained with PE labeled anti-BCMA(biolegend#357504) and analyzed by flow cytometry.

## Sequence

Human BCMA (accession number NM\_001192)

MLQMAGQCSQNEYFDSLHACIPCQLRCSNTPPLTCQRYCNASVTNSVKGNTNAILWTCLGLSLIISLAVFVLMFLLRKINSEPLKD  
EFKNTGSGLLGMANIDLEKSRGTGDEIILPRGLETVVEECTCEDCIKSKPKVSDSDHCFPLPAMEEGATILVTTKTNDYCKSLPAALSAT  
EIEKSISAR

## Troubleshooting Guide

Visit [bpsbioscience.com/lentivirus-faq](https://bpsbioscience.com/lentivirus-faq) for detailed troubleshooting instructions. For all further questions, please email [support@bpsbioscience.com](mailto:support@bpsbioscience.com).

**Related Products**

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
Trop2 Lentivirus	78710	500 µl x 2
GPC3 Lentivirus	78711	500 µl x 2
Nectin-4 Lentivirus	78712	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