Description

The CD22 Lentiviruses are replication incompetent, HIV based, VSV-G pseudotyped lentiviral particles that are ready to infect almost all types of mammalian cells, including primary and non-dividing cells. These viruses constitutively express human CD22 (NM_001771) under the control of an EF1A promoter (Figure 1).

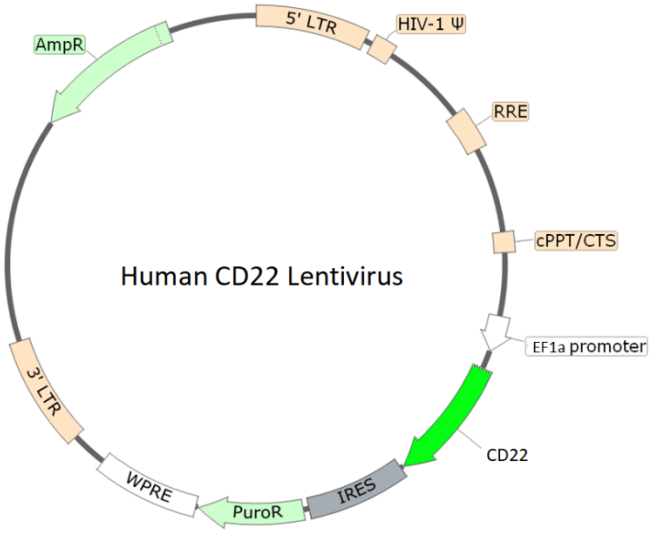

Figure 1. Schematic of the lenti-vector used to generate the CD22 Lentivirus.

Background

CD22, also known as Siglec-2, is expressed on the membrane of B-cells. It acts as an inhibitory co-receptor of the B-cell receptor to control the B-cell immune response. In 2017 the FDA approved Besponsa, an antibody-drug conjugate targeting CD22, for patients with B-cell acute lymphoblastic leukemia (ALL). Additional therapies targeting CD22 are under evaluation.

Application

- Study the transient expression of human CD22 in target cells.
- Generate a stable cell line expressing human CD22 with limiting dilution and 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 will be 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 CD22 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.

Figures and Validation Data

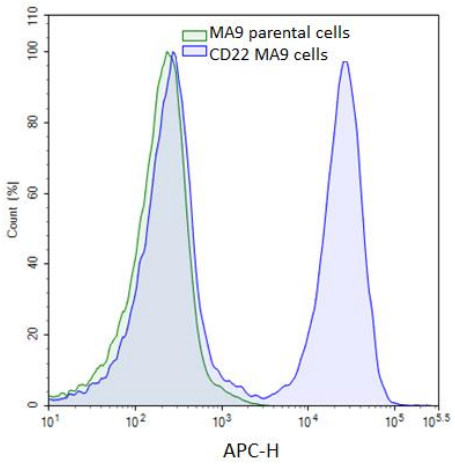

Figure 2. Transduction of MA9 cells using the CD22 lentivirus.
Approximately 50,000 MA9 cells were transduced with 500,000 TU of CD22 lentivirus via spinoculation (32°C x 30 min in the presence of 5 µg/ml of polybrene). After 48 hours of transduction, the cells were selected with 0.5 µg/ml of puromycin. The puromycin resistant cell pool was stained with APC-labeled anti-human CD22 (clone#HIB22; Biolegend #302510) and analyzed by flow cytometry.

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*
CD19 Lentivirus	78657	500 µl x 2
CD20 Lentivirus	78658	500 µl x 2