

Description

The CEACAM5 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 CEACAM5 (NM_004363.6) driven by an EF1A promoter and a puromycin selection marker (Figure 1).

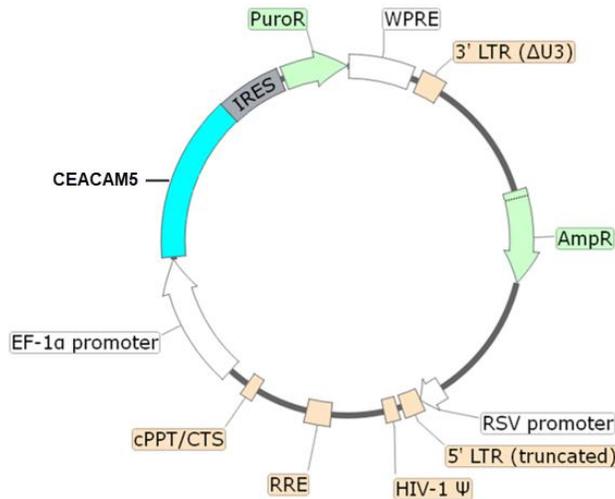


Figure 1: Schematic of the lenti-vector used to generate the CEACAM5 Lentivirus

Background

Carcinoembryonic antigen-related cell adhesion molecule 5 (CEACAM5, also known as CD66e) is a cell surface glycoprotein that serves as a cell adhesion protein. It has been used as a clinical biomarker to detect liver metastasis from gastrointestinal cancers and to predict gastrointestinal cancer relapse. CEACAM5 was recently identified as a potential target antigen for CAR T-cell therapy. Additionally, CEACAM5 may be involved in the inhibition of cell differentiation, apoptosis, and cell polarity.

Application(s)

Generate a stable cell line expressing human CEACAM5 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 μ 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°C . Avoid repeated freeze/thaw cycles. Titers can drop significantly with each freeze/thaw cycle.

Biosafety



The lentiviruses are produced with SIN (self-inactivation) lentivector which ensures self-inactivation of the lentiviral construct after transduction and integration into the genomic DNA of the target cells. 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 CEACAM5 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

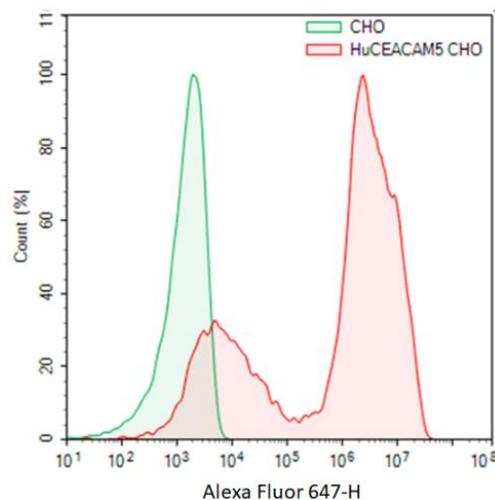


Figure 2: Transduction of CHO-K1 using CEACAM5 Lentivirus.

Approximately 50,000 CHO-K1 cells were transduced with 500,000 TU of CEACAM5 lentiviruses. After 66 hours of transduction, the cells were selected with 5 μ g/ml of puromycin. The puromycin-resistant cell pool was stained using Alexa Fluor® 647 anti-human CD66d/e Antibody (Biolegend #392805) and analyzed by flow cytometry.

Sequence

Human CEACAM5 (NM_004363.6)

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MESPSAPPHRWCIWQQRLLLTASLLTFWNPPTAKLTIESTPFNVAEGKEVLLLHNLQPQLHFGYSWYKGERVDGNRQIIGYVIGT
QQATPGPAYSGREIIPNASLLIQNIQNDTGFYTLHVIKSDLVNEEATGQFRVYPELPKPSISSNNSKPVEDKDAVAFTCEPETQDA
TYLWWVNNQSLPVSRLQLSNGNRLLTFNVTRNDTASYKCETQNPVSARRSDSVILNVLYGPDAPTISPLNTSYRSGENLNLSCH
AASNPPAQYSWVNGTFQQTQELFIPNITVNNSGSYTCQAHNSDTGLNRTTITVYAEPKPFITSNNSNPVEDEDAVALTCE
PEIQNTTYLWWVNNQSLPVSRLQLSNDNRLLTLLSVTRNDVGPYECGIQNELSVDHSDPVILNVLYGPDPTISPSYTYRPGVN
LSLSCHAASNPPAQYSWLIDGNIQQHTQELFISNITEKNSGLYTCQANNSASGHSRTTVKTITVSAELPKPSISSNNSKPVEDKDAV
AFTCEPEAQNTTYLWWVNGQSLPVSRLQLSNGNRLLTFNVTRNDARAYVCGIQNSVSANRSDPVTLDLVLYGPDPTIISPPDSS
YLSGANLNLSCHSASNPSQYSWRINGIPQQHTQVLFIAKITPNNNGTYACFVSNLATGRNNSIVKSITVSASGTSPGLSAGATVGI
MIGVLVGVALI
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Troubleshooting Guide

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

Related Products

| <i>Products</i> | <i>Catalog #</i> | <i>Size</i> |
|----------------------------------|------------------|-------------|
| CEACAM6 Lentivirus | 78720 | 500 µl x 2 |
| CEACAM5 CHO Cell Line | 78704 | 2 vials |
| CEACAM5, Avi-His-Tag Recombinant | 100509 | 100 µg |