

### Description

The B7-H4 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 B7-H4 (NM\_024626.4) driven by a CMV promoter and a puromycin selection marker (Figure 1).

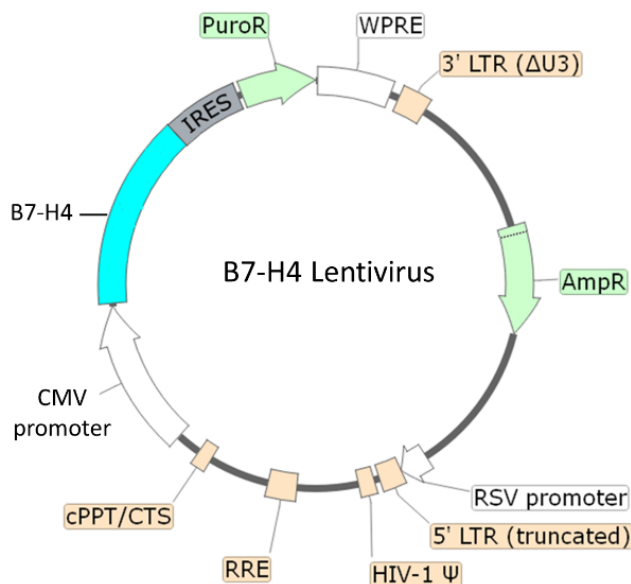


Figure 1: Schematic of the lenti-vector used to generate the B7-H4 Lentivirus.

### Background

B7-H4, also known as V-set domain-containing T-cell activation inhibitor 1 (VTCN1), is an immune checkpoint protein found on the surface of antigen-presenting cells. Its receptor has not yet been identified, but B7-H4 binds to receptor(s) on the surface of T cells, inhibiting T cell responses and suppressing tumor-associated immunity. High expression levels of B7-H4 have been correlated with tumor progression, particularly in ovarian and breast cancer.

### Application(s)

Generate a stable cell line expressing human B7-H4 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  $\mu$ 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

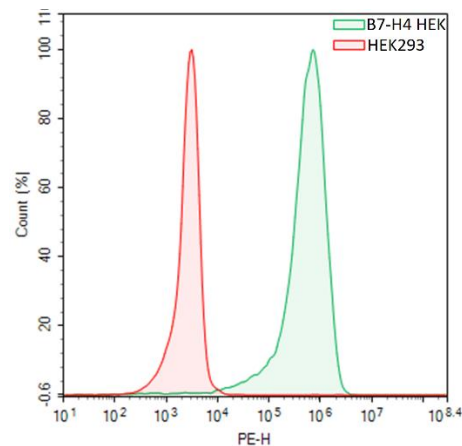


The lentiviruses are produced with SIN (self-inactivation) lentivector which ensures self-inactivation of the lentiviral construct after transduction and integration into the genomic DNA of the target cells. None of the HIV genes (*gag*, *pol*, *rev*) will be expressed in the transduced cells, as they 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 B7-H4 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 HEK293 using B7-H4 Lentivirus.*

Approximately 50,000 HEK293 cells were transduced with 500,000 TU of B7-H4 lentivirus. After 48 hours of transduction, the cells were stained PE-labeled anti-B7-H4 (VTCN1) Antibody (Biolegend #358103) and analyzed by flow cytometry.

## Sequence

Human B7-H4 (NM\_024626.4)

```
MASLGQILFWSIISIIILAGAIALIIGFGISGRHSITVTTVASAGNIGEDGILSCTFEPDIKLSDIVIQWLKEGVLGLVHEFKEGKDELSEQ
DEMFRGRTAVFADQVIVGNASRLKKNVQLTDAGTYKCYIITSKGGKGNANLEYKTGAFSMPEVNVVDYNASSETLRCEAPRWFPQP
TVVWASQVDQGANFSEVSNTSFELNSENVTMKVSVLYNVTINNTYSCMIENDIAKATGDIKVTESEIKRRSHLQLLNSKASLCVS
SFFAISWALLPLSPYLMLK
```

## 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**

Products	Catalog #	Size
B7-H4, His-tag (Human) Recombinant	71144	100 µg
B7-H4, His-tag, Biotin-labeled (Human) HiP™ Recombinant	71129	25 µg, 50 µg