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## Data Sheet

### ***Bald Lentiviral Pseudovirion (eGFP Reporter)***

**Catalog#: 79987**

#### **Product Description**

The bald lentiviral pseudovirion was produced without envelope glycoproteins such as VSV-G or SARS-CoV-2 spike. It contains the eGFP gene driven by a CMV promoter (Figure 1) as the reporter. The bald lentiviral pseudovirion can serve as a negative control when studying virus entry initiated by specific interactions between virus particles and receptors.

#### **Application**

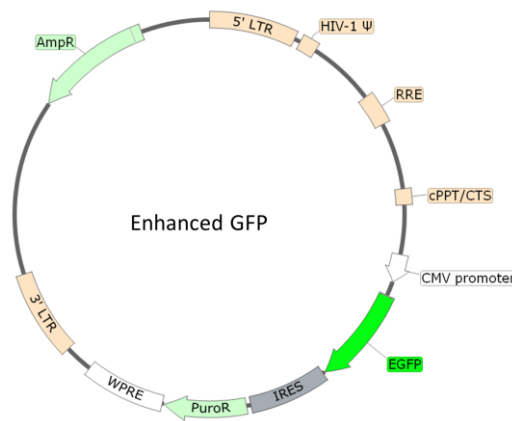
Ideal as a negative control pseudovirion for the Spike (SARS-CoV-2) Pseudotyped Lentivirus (eGFP Reporter), BPS Bioscience #79981 or other pseudovirions used to study the mechanism of viral transduction.

#### **Formulation**

The lentiviruses were produced from HEK293T cells in medium containing 90% DMEM + 10% FBS.

#### **Titer**

Since the virus is lacking the envelope glycoproteins and cannot transduce target cells, functional titer of this product cannot be determined. Based on p24 values, the approximate number of lentiviral particles (LP) of this product is  $\sim 10^9$  LP/ml.



**Figure 1. Schematic of the eGFP Reporter in Bald Lentiviral Pseudovirion (eGFP Reporter)**

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### **Storage**

Lentiviruses are shipped with dry ice. For long term storage, it is recommended to store the virus 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. Although the pseudotyped lentiviruses are replication-incompetent, they require the use of a Biosafety Level 2 facility. BPS recommends following all local federal, state, and institutional regulations and using all appropriate safety precautions.

### **Materials Required but Not Supplied**

- HEK293 growth medium or use Thaw Medium 1 (BPS Bioscience #60187): MEM supplemented with 10% FBS, 1% non-essential amino acids (Hyclone #SH30238.01), 1 mM Na pyruvate (Hyclone #SH30239.01), 1% Penicillin/Streptomycin (Hyclone #SV30010.01).
- ACE2-HEK293 Recombinant Cell Line (BPS Bioscience, #79951)
- SARS-CoV-2 Spike Pseudotyped Lentivirus (eGFP Reporter) (BPS Bioscience, #79981)

### **Assay Protocol**

The following protocol is a general guideline for transducing ACE2-HEK293 cells using SARS-CoV-2 Spike pseudotyped lentivirus (eGFP reporter) and the corresponding control bald lentiviral pseudovirion. The optimal transduction conditions (e.g. MOI, concentration of polybrene, time of assay development) should be optimized according to the cell type and the assay requirements. In most cell types, the expression of the reporter gene can be measured approximately 48-72 hours after transduction.

1. Day 1: Harvest ACE2-HEK293 cells from culture and seed cells at a density of 5,000-10,000 cells per well into white opaque 96-well microplate in 50 µl of Thaw Medium 1 (BPS Bioscience, #60187). Incubate cells at 37°C with 5% CO<sub>2</sub> overnight.

For control cells to demonstrate the transduction is dependent upon ACE2, the same number of HEK293 parental cells were seeded.

2. Day 2: Add 50 µl of SARS-CoV-2 Spike pseudotyped lentivirus (eGFP reporter) or bald lentiviral pseudovirion (eGFP reporter) into each well.

Optional: Add polybrene to each well at a final concentration of 5 µg/ml.

*Alternatively, seeding cells and the transduction can be performed at the same day.*

Incubate the plates at 37°C with 5% CO<sub>2</sub> overnight.

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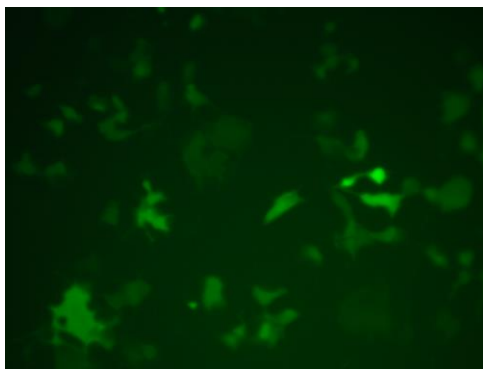
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3. Day 3: Remove the medium containing the lentivirus from the wells. Add 50  $\mu$ l of fresh Thaw Medium 1 to each well.

*If neither the polybrene nor the lentivirus adversely affects the target cells, it is not necessary to change the medium on Day 3. The target cells can be incubated with the virus for 48-72 hours before changing the medium.*

4. Day 4-5, approximately 48-72 hours after transduction, the expression of eGFP in the target cells were examined using fluorescence microscopy.



**Figure 2. Transduction of ACE2-HEK293 cells using SARS-CoV-2 Spike pseudotyped lentivirus (eGFP reporter).** Approximately 10,000 cells/well of ACE2-HEK293 cells or HEK293 parental cells were transduced with 50  $\mu$ l/well of SARS-CoV-2-Spike pseudotyped lentivirus (eGFP reporter) or bald lentiviral pseudovirion (eGFP reporter). After 18 hours of transduction, the medium was changed to fresh HEK growth medium (Thaw Medium 1). After 66 hours of transduction, the expression of eGFP in the target cells was observed under a fluorescence microscope.

As negative controls, almost no eGFP expression was observed in ACE2-HEK cells transduced with Bald Lentiviral Pseudovirion (eGFP reporter) or HEK parental cells transduced with SARS-CoV-2-Spike pseudotyped lentivirus (eGFP reporter), indicating the transduction is dependent upon the ACE2 receptor.

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## Related Products

| <b>Product</b>   | <b>Cat. #</b> | <b>Size</b> |
|--|---------------|-------------|
| SARS-CoV-2 Spike Pseudotyped Lentivirus (Luciferase Reporter)              | 79942         | 500 µl x2   |
| Bald Lentiviral Pseudovirion (Luciferase Reporter)                         | 79943         | 500 µl x2   |
| SARS-CoV-2 Spike Pseudotyped Lentivirus (eGFP Reporter)                    | 79981         | 500 µl x2   |
| SARS-CoV-2 Spike Pseudotyped Lentivirus<br>(Luciferase-eGFP Dual Reporter) | 79982         | 500 µl x2   |
| Bald Lentiviral Pseudovirion (Luciferase-eGFP dual Reporter)               | 79988         | 500 µl x2   |
| eGFP Lentivirus  | 79979         | 500 µl x2   |
| NFκB Luciferase Reporter Lentivirus  | 79564         | 500 µl x2   |
| CRE Luciferase Reporter Lentivirus   | 79580         | 500 µl x2   |
| NFAT Luciferase Reporter Lentivirus  | 79579         | 500 µl x2   |
| STAT3 Luciferase Reporter Lentivirus                                       | 79744         | 500 µl x2   |
| STAT5 Luciferase Reporter Lentivirus                                       | 79745         | 500 µl x2   |
| TCF/LEF Luciferase Reporter Lentivirus                                     | 79787         | 500 µl x2   |
| ISRE Luciferase Reporter Lentivirus  | 79824         | 500 µl x2   |
| IL-2 Promoter Luciferase Reporter Lentivirus                               | 79825         | 500 µl x2   |
| IL-8 Promoter Luciferase Reporter Lentivirus                               | 79827         | 500 µl x2   |
| AP-1 Luciferase Reporter Lentivirus  | 79823         | 500 µl x2   |
| SBE Luciferase Reporter Lentivirus   | 79806         | 500 µl x2   |
| TEAD Luciferase Reporter Lentivirus  | 79833         | 500 µl x2   |
| ARE Luciferase Reporter Lentivirus   | 79869         | 500 µl x2   |
| Negative Control Lentivirus  | 79578         | 500 µl x2   |
| Renilla Luciferase (Rluc) Lentivirus                                       | 79565         | 500 µl x2   |
| Firefly Luciferase (Fluc) Lentivirus (G418)                                | 79692-G       | 500 µl x2   |
| Firefly Luciferase (Fluc) Lentivirus (Hygromycin)                          | 79692-H       | 500 µl x2   |
| Firefly Luciferase (Fluc) Lentivirus (Puromycin)                           | 79692-P       | 500 µl x2   |

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