

**Description**

The Firefly Luciferase-eGFP Lentivirus are replication incompetent, HIV-based, VSV-G pseudotyped lentiviral particles that are ready to be transduced into almost all types mammalian cells, including primary and non-dividing cells. These viruses contain a firefly luciferase and eGFP cassette (Luc-P2A-eGFP) driven by a CMV promoter (Figure 1). Both the luciferase and eGFP are coexpressed under the CMV promoter in the transduced cells, allowing greater flexibility for detection of transduced cells.

**Application**

Ideal as a positive control for transduction; useful for transduction optimization.

**Formulation**

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

**Titer**

Two vials (500  $\mu$ l x 2) of Firefly Luciferase-eGFP lentivirus at a titer  $\geq 1 \times 10^7$  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 virus 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. 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**

These materials are not supplied with this lentivirus but are necessary to follow the designed protocol. BPS Bioscience media, reagents, and luciferase assay systems are all validated and optimized for use with this lentivirus and are highly recommended for best results.

Name	Ordering Information
HEK293 growth medium or Thaw Medium 1	BPS Bioscience #60187
96-well tissue culture treated	Corning #3610
ONE-STEP Luciferase Assay System	BPS Bioscience #60690
Luminometer	

**License Disclosure**

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Figures and Validation Data

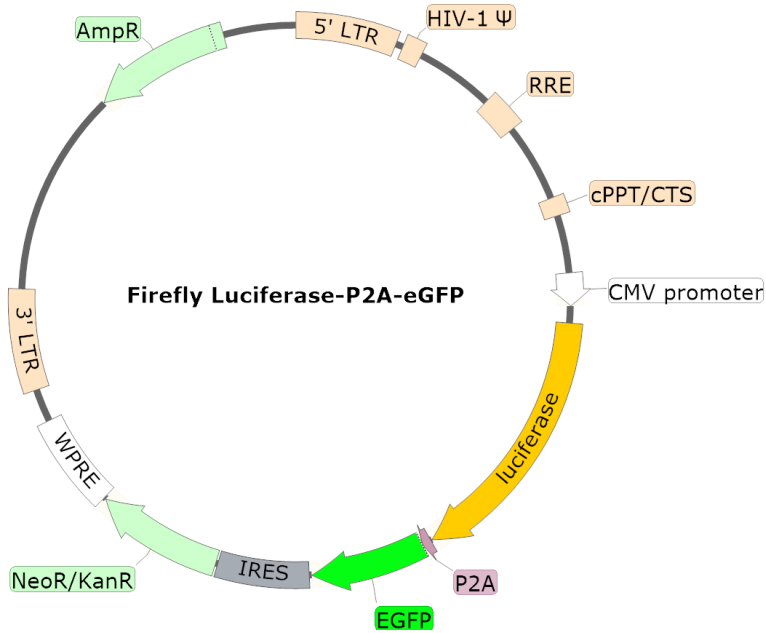
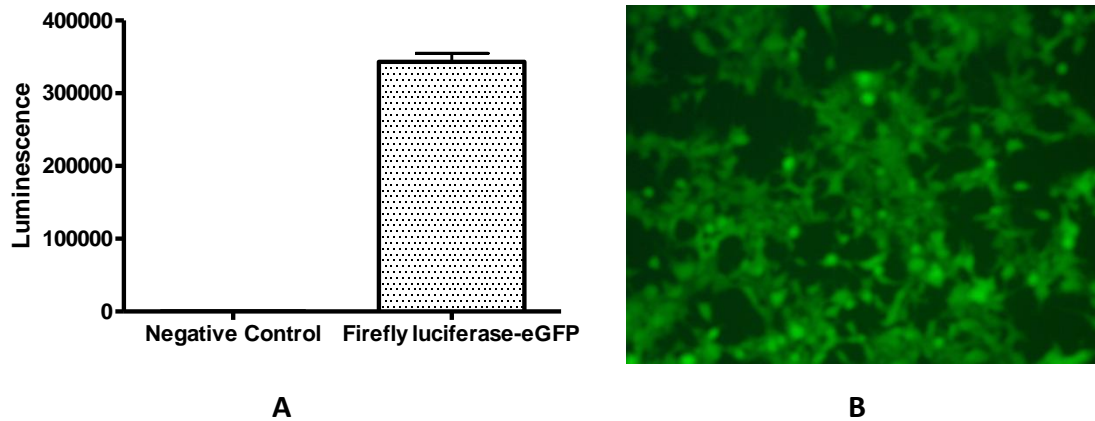


Figure 1. Schematic of lenti-vector used to generate the firefly luciferase-eGFP lentivirus



**Important Notes**

To generate the Firefly Luciferase-eGFP stable cell line, on day 4 remove HEK growth medium and replace it with fresh growth medium containing the appropriate amount of G418 for antibiotic selection of transduced cells.



*Figure 2. Transduction of HEK293 Cells Monitored by Luciferase Activity and eGFP expression.*

A. Approximately 10,000 cells/well of HEK293 cells were transduced with 5  $\mu$ l/well of Firefly Luciferase-eGFP lentivirus or expression negative control lentivirus (BPS Bioscience #79902-G). After 18 hours of transduction, the medium was changed to fresh HEK growth medium (Thaw Medium 1). After 48 hours of transduction, ONE-Step Luciferase reagent (BPS Bioscience, #60690) was added to cells to measure the luciferase activity.

B. Approximately 10,000 cells/well of HEK293 cells were transduced with 5  $\mu$ l/well of Firefly Luciferase-eGFP lentivirus. After 18 hours of transduction, the medium was changed to fresh HEK growth medium (Thaw Medium 1). After 48 hours of transduction, the expression of eGFP in the target cells was examined using fluorescence microscopy

**Related Products**

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
SARS-CoV-2 Spike Pseudotyped Lentivirus (Luciferase Reporter)	79942	500 µl x 2
Bald Lentiviral Pseudovirion (Luciferase Reporter)	79943	500 µl x 2
SARS-CoV-2 Spike Pseudotyped Lentivirus (eGFP Reporter)	79981	500 µl x 2
SARS-CoV-2 Spike Pseudotyped Lentivirus (Luciferase-eGFP Reporter)	79982	500 µl x 2
Bald Lentiviral Pseudovirion (eGFP Reporter)	79987	500 µl x 2
Bald Lentiviral Pseudovirion (Luciferase-eGFP dual Reporter)	79988	500 µl x 2
eGFP Lentivirus	79979	500 µl x 2
Negative Control Lentivirus	79578	500 µl x 2
Renilla Luciferase (Rluc) Lentivirus	79565	500 µl x 2
Firefly Luciferase (Fluc) Lentivirus (G418)	79692-G	500 µl x 2
Firefly Luciferase (Fluc) Lentivirus (Hygromycin)	79692-H	500 µl x 2
Firefly Luciferase (Fluc) Lentivirus (Puromycin)	79692-P	500 µl x 2
Expression negative Control Lentivirus	79902	500 µl x 2
NFAT eGFP Reporter Lentivirus	79922	500 µl x 2