SARS-CoV and SARS-CoV-2 S protein pseudotyped lentiviruses

We help our customers to assemble SARS-CoV and SARS-CoV-2 S protein pseudotyped lentiviruses. These particles carry reporters that can be used for antiviral drug screening or the quantification of neutralizing antibodies. Using reporter constructs from our customers, we can assemble particles within 1-2 weeks. For quote, please email info@101Bio.com

We also offer 6 pre-assembled, particles for your initial testing (see table below). These particles can be used with our pseudovirus Infection Enhancer (Cat# CoV2-1 ml), which can greatly promote productive infection of SARS-CoV and SARS-CoV-2 Pseudoviruses. **In addition, this enhancer** can be used to facilitate the infection of a variety of host cells by enveloped viruses, and can enhance viral infection rates by 5 to 20 folds.

Important Notice:

1) The SARS-CoV-2 S protein pseudotyped lentiviral particles naturally have much lower infectivity than SARS-CoV S protein pseudotyped particles. The GFP reporter virus is designed for fluorescent microscopy use only. The particles will produce low percentage of GFP positive cells that may not be quantifiable by flow cytometry.

2) **Use our enhancer (Cov2-1ml) for robust signal.** This enhancer works perfectly for SARS-CoV and SARS-CoV-2 S protein pseudotyped reporter viruses (see **Fig. 1**).

3) The Luc reporter is expressed from the HIV-1 LTR promoter, which is driven by co-expression of the Tat protein that is present only in infected cells. The LTR/Tat-Luc reporter system is more robust and consistent than common promoters used for reporter expression in a variety of cells.

Suggested Protocol for infecting Vero E6 cells with pseudovirus in 12-well plate

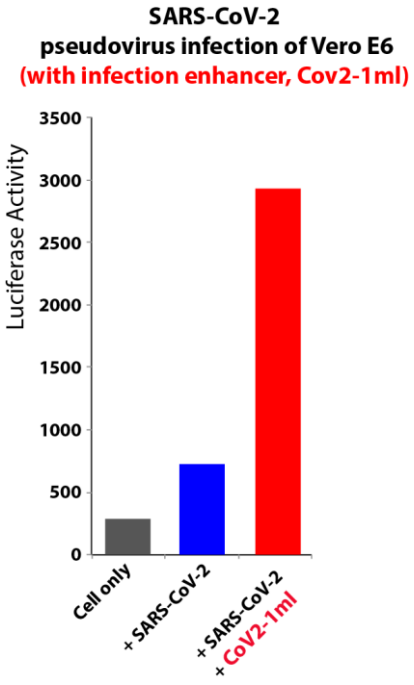
** It is strongly suggested to use Infection Enhancer for pseudoviruses.*

1) Counting cells, and cell viability should be around 90%.
2) Seeding cells $1x10^5$ / well in 1 ml medium. Culture overnight.
3) Remove medium, add 250 ul fresh culture medium
4) Add 25 ul virus Infection Enhancer (10 x), incubate for 30minutes in cell culture incubator.
5) Add virus (200 – 500 ul), and add additional virus Infection Enhancer (10 x) in 10% of the virus volume (*e.g*, for 500 ul of virus, add 50 ul enhancer).
6) Infection for 2-4 hours.
7) Add 1 ml fresh culture medium, continue to culture infected cells for 48-72 hours.

Harvesting cells for luciferase assay

- Remove supernatant, wash cells once with 1 ml cold PBS.
- Add 300 ul Trapsin to dislodge cells, incubate for 3-5 minutes at 37°C
- Add 500 ul culture medium to re-suspend cells.
- Transfer cells to 1.5 ml micro-centrifuge tube, centrifuge at maximal speed for 1 minute
- Remove the supernatant, freeze cell pellet in -80°C
- Perform luciferase assay using a commercial kit and a luciferase reader such as GlowMax

Fig. 1. Example of results using infection enhancer:

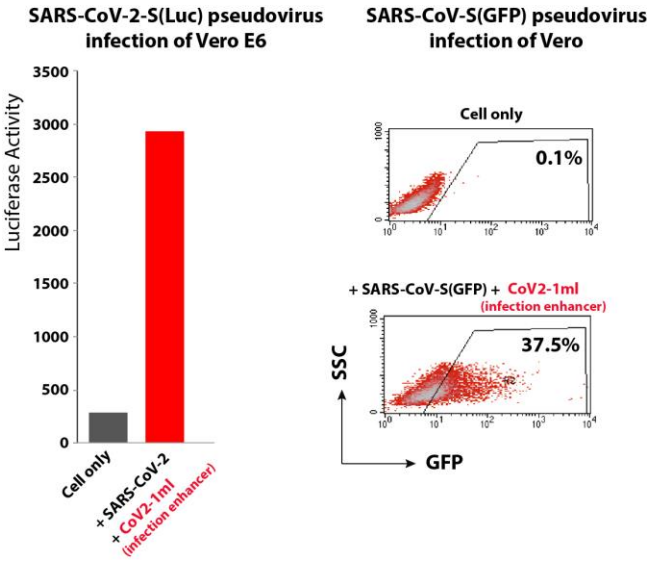


SARS-CoV-2-S(Luc) pseudovirus infection of Vero E6 cells with pseudovirus infection enhancer:

Vero E6 cells were transduced with SARS-CoV-2-S(Luc) lenti-pseudovirus with a luciferase reporter in the presence or absence of infection enhancer. Reporter expression was quantified at 3 days post transduction (luciferase assay).

60 X concentrated, SARS-CoV and SAR-CoV-2 pseudoviral particles

Fig. 2. Example of results:



SARS-CoV-2 S protein pseudotyped lentiviral particle transduction of Vero E6 cells (Left):

Vero E6 cells were transduced with SARS-CoV-2-S(Luc) lenti-pseudovirus (with a luciferase reporter) in the presence of infection enhancer. Reporter expression was quantified at 3 days post transduction (luciferase assay).

SARS-CoV S protein pseudotyped lentiviral particle transduction of Vero cells (Right):

Vero cells were transduced with SARS-CoV-S(GFP) lenti-pseudovirus (with a GFP reporter) in the presence of infection enhancer. Reporter expression was quantified at 2 days post transduction (GFP flow cytometry).

Applications

- SARS-CoV and SARS-CoV-2 pseudovirus transduction of target cells for viral entry and functional studies.
- Anti-SARS-CoV and SARS-CoV-2 drug screening
- Anti-SARS-CoV and SARS-CoV-2 neutralizing antibody screening

SARS-CoV and CoV-2 pseudoviruses are intended for Research Use Only

Cat. #	60 X concentrated, SARS-CoV and SAR-CoV-2 pseudoviral particles
CoV2-01	500 µl of 60 X SARS-CoV-2 S protein pseudotyped lentiviral particles, GFP reporter
CoV2-02	500 µl of 60 X SARS-CoV-2 S protein pseudotyped lentiviral particles, luciferase reporter
CoV-01	500 µl of 60 X SARS-CoV S protein pseudotyped lentiviral particles, GFP reporter
CoV-02	500 µl of 60 X SARS-CoV S protein pseudotyped lentiviral particles, luciferase reporter
VSV-G-01	500 µl of 60 X VSV-G protein pseudotyped lentiviral particles, GFP reporter
VSV-G-02	500 µl of 60 X VSV-G protein pseudotyped lentiviral particles, luciferase reporter
	SARS-CoV-2 Pseudovirus Infection Enhancer
CoV2-200	SARS-CoV-2 Pseudovirus Infection Enhancer, 200 µl of 10 X CoV-2-PIE solution
CoV2-1ml	SARS-CoV-2 Pseudovirus Infection Enhancer, 1 ml of 10 X CoV-2-PIE solution

We also provide

HIV Rev-dependent Reporter Cells (Cat.# HRC-1) and HIV infection enhancer (H901-1) Link

Real 3D Cell Culture Gel Col-Tgel (Cat.# P720) Link

Lentivirus / Retrovirus 10X Titer-Up Reagent (Cat.# P906 / P909) Link

95% pure Exosome Isolation kits Link

Mouse tail DNA extraction kit Link

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