

EXOBX® Lentivirus Infection Enhancement Kit

Cat. no. R1401

Address: SHT technology GmbH, Niederhöchstädter Str. 64, 61476 Kronberg im Taunus, Germany

Tel.: +49 176 34989414

Website: <https://sht-medino.de/>

EXOBX® Lentivirus Infection Enhancement Kit

Cat. no. R1401

Cat. No.	Reagent In Kit	Size	Storage
R1401-A	Reagent A	1 tube	4 °C
R1401-B	Reagent B	1 tube	-80 °C
R1401-C	Reagent C	3 tubes	4 °C

1. Transportation and Storage

- This product requires low-temperature transportation. Each component should be stored separately according to its specific storage conditions. The shelf life is 12 months.

2. Important Information (Please read before using the kit)

- 1) Reagent A and Reagent C should be stored at 4°C. Freezing is strictly prohibited, as it will lead to loss of function.
- 2) Reagent B should be stored at -80°C for 12 months or at -20°C for 1 month.
- 3) Use high-titer lentivirus supernatant or purified lentivirus solution for infection to ensure optimal experimental results. If the lentivirus titer is too low, the enhancement effect may not be significant.
- 4) Maintain cell density below 70% during lentivirus infection. High cell density may negatively affect infection efficiency.
- 5) **The reagent amounts listed in this manual have been optimized for most cell lines and do not cause cytotoxicity. However, if cytotoxicity is observed in specific cells, reduce the reagent dosage proportionally.**
- 6) **To avoid cytotoxicity, the reagent volumes can be reduced proportionally as needed.**
- 7) **The reagent volumes listed in this manual are intended for 2 mL culture systems. For larger culture systems (e.g., 100 mm culture dishes with 10 mL culture medium), adjust reagent amounts proportionally.**
- 8) This product is sterile-packaged. Ensure sterile conditions during use to prevent cell contamination.
- 9) This product is for research use only!

3. Product Introduction

This product is designed to enhance lentivirus infection efficiency. Compared to the classic lentivirus infection enhancer Polybrene, it improves infection efficiency by 4-8 times.

4. Features and Advantages

- 1) Effectively enhances lentivirus infection in various cell lines.
- 2) Non-toxic to most cell types.

5. Experimental Procedure

- 1) Cell Culture: Seed cells into a 6-well plate at 2 mL per well. After 24 hours, ensure the cell density reaches 30-70%.
(A cell density higher than 70% is not conducive to viral infection, so it should be kept below this level.)
- 2) Preparation of Lentivirus Infection Enhancement Solution:
 - a. Prepare a sterile 1.5 mL EP tube.
 - b. Add 946 μ L of cell culture medium.
 - c. Add 2 μ L of Reagent A, 2 μ L of Reagent B, and 50 μ L of Reagent C. Mix well.
- 3) Replace Culture Medium: Remove the culture medium from the 6-well plate and add 1 mL of the prepared infection enhancement solution to each well.
- 4) Lentivirus Infection:
 - a. Add 1 mL of lentivirus-containing supernatant to each well.
 - b. Mix with the previously added infection enhancement solution to maintain a total culture volume of 2 mL per well.
 - c. Continue incubation in a CO₂ incubator.
- 5) Medium Change:
 - a. 24 hours after infection, replace with fresh culture medium.
 - b. Continue incubation for 48 hours.
 - c. If the cells grow rapidly, monitor their condition and replace the culture medium as needed based on cell growth and medium color changes to ensure optimal cell viability.
- 6) Detection:
 - d. 72 hours after infection, assess lentivirus infection efficiency.
 - e. Use fluorescence microscopy to observe GFP (Green Fluorescent Protein) expression if applicable.
 - f. Alternatively, use other methods to detect target protein expression.

6. Evaluation

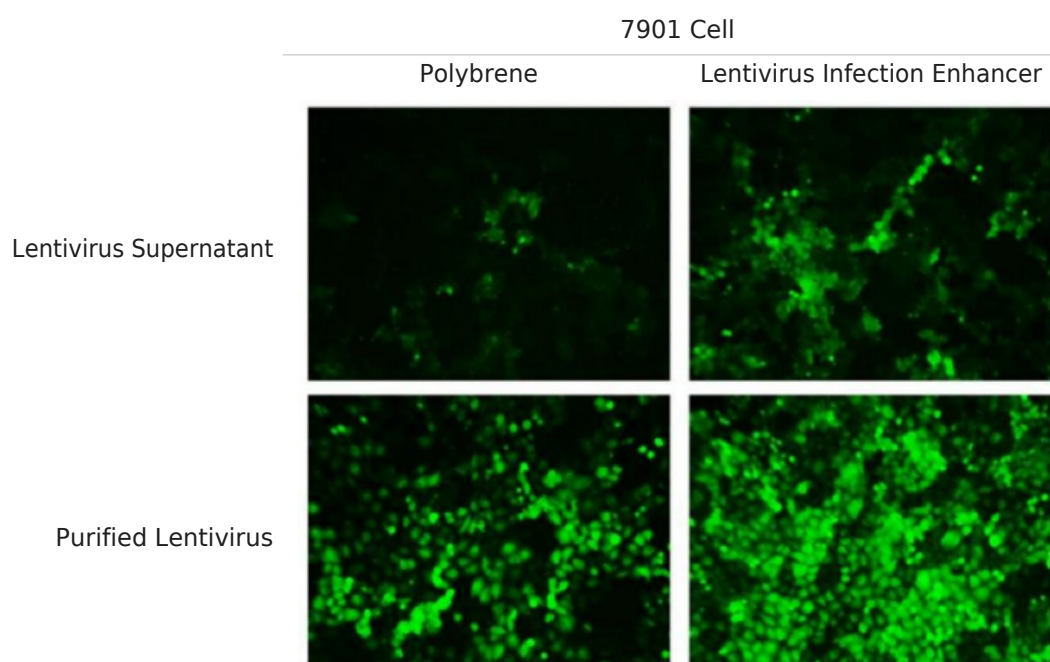


Fig. 1. Validation of lentivirus packaging, purification, and infect target cells.

293TN cells were used to package lentivirus (Lenti-GFP), which was then purified and used to infect 7901 cells. Lentivirus purification significantly enhanced its infection efficiency, and the lentivirus infection enhancer further improved the infection efficiency of both purified and unpurified lentivirus.

7. Troubleshooting

Issue	Possible Cause	Solution
Poor Enhancement Effect	Reagents are expired	Check the production date and ensure the reagents are within their shelf life.
	Incorrect storage conditions	Reagent A and C must not be frozen; Reagent B should be stored at -80°C.
	Low lentivirus titer	Use purified lentivirus or package lentivirus with a higher titer.
	Insufficient lentivirus volume	Increase the amount of lentivirus used.
	Poor cell condition	Use logarithmic phase cells for lentivirus infection.
	Excessive cell density	Reduce cell density before infection.
	Reagents are expired	Check the production date and ensure the reagents are within their shelf life.
	Incorrect storage conditions	Reagent A and C must not be frozen; Reagent B should be stored at -80°C.

	Low lentivirus titer	Use purified lentivirus or package lentivirus with a higher titer.
Low infection efficiency	Excessive reagent volume	Reduce reagent volume proportionally.
	Uneven reagent distribution	Do not add the enhancement reagent directly to the culture medium. Pre-mix with a portion of the medium before adding to the plate.
	Low cell density	Increase cell density at the time of infection.
	Poor cell condition	Use healthy, actively growing cells for infection.
	Cell line-specific response	Suspension cells are generally more sensitive than adherent cells; primary cells are more sensitive than cell lines. Reduce reagent volumes accordingly for sensitive cells.