

β -Galactosidase Lentivirus Control

CATALOG NUMBER: LTV-302 **STORAGE:** -80°C, Avoid repeat freeze/thaw cycles

QUANTITY AND CONCENTRATION: 500 μ L, $>1 \times 10^5$ TU/mL in DMEM, 10% FBS, Pen-Strep

Background

Lentivirus vector based on the human immunodeficiency virus-1 (HIV-1) has become a promising vector for gene transfer studies. The advantageous feature of lentivirus vector is the ability of gene transfer and integration into dividing and non-dividing cells. The pseudotyped envelope with vesicular stomatitis virus envelope G (VSV-G) protein broadens the target cell range. Lentiviral vectors have been shown to deliver genes to neurons, lymphocytes and macrophages, cell types that previous retrovirus vectors could not be used. Lentiviral vectors have also proven to be effective in transducing brain, liver, muscle, and retina *in vivo* without toxicity or immune responses. Recently, the lentivirus system is widely used to integrate siRNA efficiently in a wide variety of cell lines and primary cells both *in vitro* and *in vivo*.

The provided β -Galactosidase lentivirus control is produced by cotransfecting 293T cells (Cat.# LTV-100) with pSMPUW-MNDnLacZ (Figure 1) and a lentivirus packaging mix (ViraSafe™ Lentiviral Packaging System, Cat. # VPK-206). pSMPUW-MNDnLacZ is a lentiviral transfer vector with MND retroviral LTR promoter driving expression of a nuclear localized LacZ.

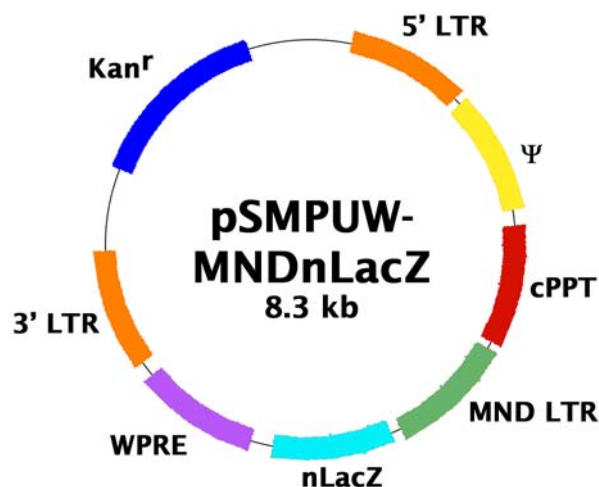


Figure 1. Schematic representation of LacZ lentivirus expression vector (Cat.# LTV-402).

Quality Control

This vial contains 500 μ L of β -Galactosidase lentiviral control supernatant with at least 1.0×10^5 TU/mL (infectious titer) as determined by X-gal staining of infected 293 cells (Figure 2).

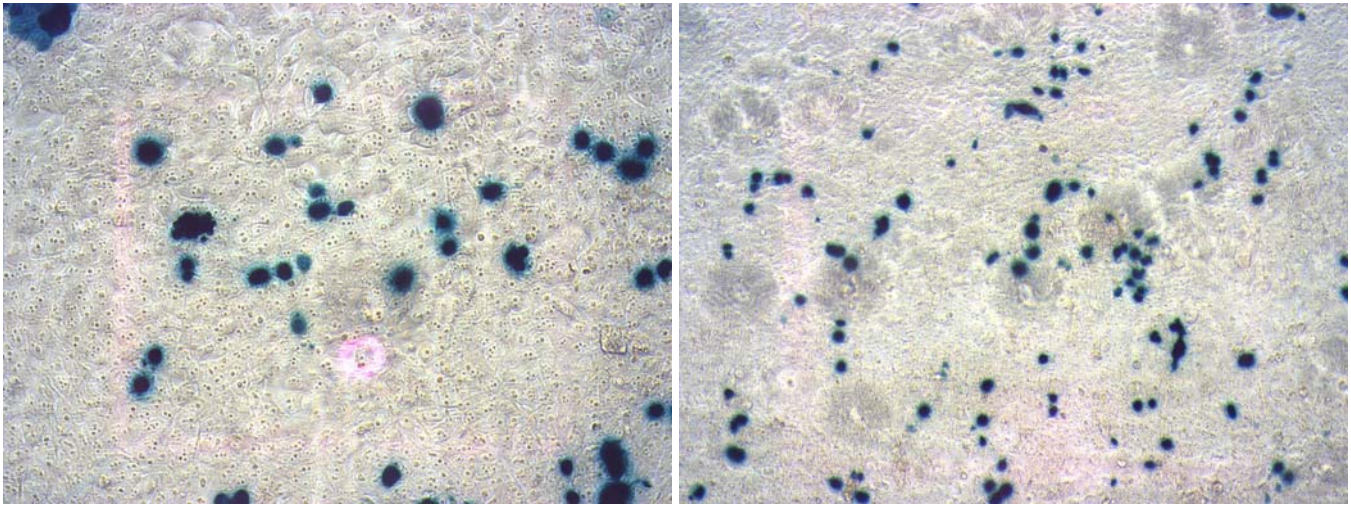


Figure 2: β -Galactosidase Expression in 293 cells: 293 cells are seeded at 100,000 cells/well in a 6-well plate overnight. Cells were infected with β -Galactosidase lentivirus in the presence of 8 μ g/mL Polybrene for 72 hrs.

Safety Considerations

Remember that you will be working with samples containing infectious virus. Follow the recommended NIH guidelines for all materials containing BSL-2 organisms. Precautions must be taken to avoid direct contact with viral supernatants.

References

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3. Kahl C. A., Marsh J., Fyffe J., Sanders D. A., and K. Cornetta (2004) *J Virol.* **78**:1421-30.
4. White S. M., Renda M., Nam N. Y., Klimatcheva E., Zhu Y., Fisk J., Halterman M., Rimel B. J., Federoff H., Pandya S., Rosenblatt J. D., and V. Planelles (1999) *J Virol.* **73**:2832-40.
5. Kafri T., van Praag H., Ouyang L., Gage F. H., and I. M. Verma (1999) *J Virol.* **73**:576-84.

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