pMX- GFP Retroviral Vector

CATALOG NUMBER: RTV-050 **STORAGE:** -20ºC

QUANTITY AND CONCENTRATION: 10 µg at 0.25 µg/µL in TE

Background

Retroviruses are efficient tools for delivering heritable genes into the genome of dividing cells. Cell Biolabs' pMX-GFP retroviral vector is based on Moloney murine leukemia virus (MMLV). The vector provides the viral package signal, transcription and processing elements. The viral *env* gene, produced by the package cell line, encodes the envelope protein, which determines the viral infectivity range. Transfection into a package cell line produces high-titer, replication-incompetent viruses. In addition to transfer and expression of exogenous genes in mammalian cells, recently, retroviruses have been used to express silencing RNAs (siRNA) to decrease the expression of target genes both *in vitro* and *in vivo*.

The vector contains the ampicillin-resistance gene, MMLV LTRs, package signal and GFP insert (Figure 1).

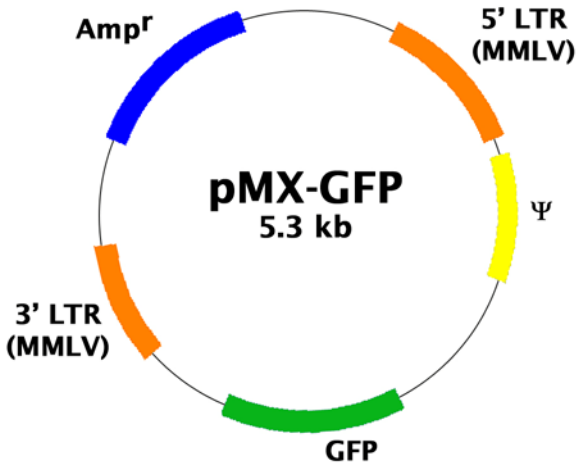

Figure 1. Schematic representation of pMX-GFP retroviral vector.

Safety Consideration

Remember that you will be working with samples containing infectious virus. Follow the recommended NIH guidelines for all materials containing BSL-2 organisms. Always wear gloves, use filtered tips and work under a biosafety hood.

References

1. Onishi, M., Kinoshita, S., Morikawa, Y., *et al*., (1996) *Exp. Hematol.* **24**, 324-327.

Recent Production Citations

1. Verusingam, N.D., et al. (2017). Susceptibility of Human Oral Squamous Cell Carcinoma (OSCC) H103 and H376 cell lines to Retroviral OSKM mediated reprogramming. *PeerJ*. **5**:e3174. doi: 10.7717/peerj.3174. eCollection 2017.
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3. Malaver-Ortega, L. F. et al. (2015). Inducing pluripotency in cattle. *Methods Mol Biol.* doi:10.1007/978-1-4939-2848-4_6.
4. Parreno, J. et al. (2015). Efficient, low-cost nucleofection of passaged chondrocytes. *Cartilage*. doi:10.1177/1947603515609399.
5. Baird, A. E. G. et al. (2015). Derivation of canine induced pluripotent stem cells. *Reproduction in Domestic Animals*. DOI: 10.1111/rda.12562.
6. Gutiérrez-Fernández, A. et al. (2015). Loss of MT1-MMP causes cell senescence and nuclear defects which can be reversed by retinoic acid. *EMBO J.* doi:10.15252/embj.201490594.
7. Wattanapanitch, M. et al. (2014). Dual Small-Molecule Targeting of SMAD Signaling Stimulates Human Induced Pluripotent Stem Cells toward Neural Lineages *PLoS One.* **9**:e106952.
8. Gallaher, Z. R. et al. (2014). Neural proliferation in the dorsal root ganglia of the adult rat following capsaicin-induced neuronal death. *J Comp Neurol.* **522**:3295-3307.
9. Wahlestedt, M. et al. (2013). An epigenetic component of hematopoietic stem cell aging amenable to reprogramming into a young state. *Blood*. **121**:4257-4264.
10. Yi, L. et al. (2012). Multiple roles of p53-related pathways in somatic cell reprogramming and stem cell differentiation. *Cancer Res*. **72**: 5635-5645.

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