

pMXs-mLin-28 Retroviral Vector

CATALOG NUMBER: RTV-712**STORAGE:** -20°C**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' pMXs retroviral vector is based on Moloney murine leukemia virus (MMLV). The vector provides the viral package signal, transcription and processing elements, and MCS for cloning of a target gene. The viral *env* gene, produced by the package cell line, encodes the envelop protein, which determines the viral infectivity range. Transfection into a package cell line produces high-titer, replication-incompetent viruses.

Induced pluripotent stem (iPS) cells can be generated from various somatic cells by the retrovirus-mediated transfection of four transcription factors, namely Oct3/4, Sox2, c-Myc, and Klf4 (Yamanaka's laboratory) or Oct3/4, Sox2, NANOG, and Lin-28 (Thomson's laboratory). It has been shown that a combination of all 6 transcription factors (Oct3/4, Sox2, c-Myc, Klf4, NANOG and Lin-28), significantly increases the efficiency of generating iPS cells from somatic cells. iPS cells are indistinguishable from ES cells in morphology, proliferation, gene expression, and teratoma formation. Furthermore, when transplanted into blastocysts, iPS cells can give rise to adult chimeras, which are competent for germline transmission.

The vector contains the ampicillin-resistance gene, MMLV LTRs, package signal and mouse Lin-28 gene cloned at BamHI and Not I sites (Figure 1).

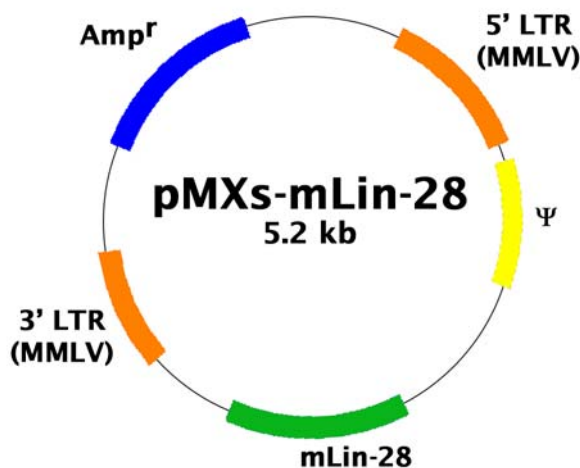


Figure 1. Schematic representation of pMXs-mLin-28 retroviral vector (5.2 kb).

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. Kitamura T., *et al.*, (2003) *Exp. Hematol.* **31**, 1007-1014.
2. Okita, K; Ichisaka, T; Yamanaka, S. (2007) *Nature* **448**:313–317.
3. Takahashi, K; Yamanaka, S. (2006) *Cell* **126**:663–676.
4. Takahashi, K; Tanabe, K; Ohnuki, M; Narita, M; Ichisaka, T, *et al.* (2007) *Cell* **131**:861–872.

License Information

The pMXs vector system is licensed from the University of Tokyo.

Warranty

These products are warranted to perform as described in their labeling and in Cell Biolabs literature when used in accordance with their instructions. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THIS EXPRESSED WARRANTY AND CELL BIOLABS DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR PARTICULAR PURPOSE. CELL BIOLABS' sole obligation and purchaser's exclusive remedy for breach of this warranty shall be, at the option of CELL BIOLABS, to repair or replace the products. In no event shall CELL BIOLABS be liable for any proximate, incidental or consequential damages in connection with the products.

This product is for RESEARCH USE ONLY; not for use in diagnostic procedures.

Contact Information

Cell Biolabs, Inc.
7758 Arjons Drive
San Diego, CA 92126
Worldwide: +1 858-271-6500
USA Toll-Free: 1-888-CBL-0505
E-mail: tech@cellbiolabs.com
www.cellbiolabs.com

©2009: Cell Biolabs, Inc. - All rights reserved. No part of these works may be reproduced in any form without permissions in writing.