pMXs-hc-Myc Retroviral Vector

CATALOG NUMBER: RTV-703 **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' 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. 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 human c-Myc gene cloned at NotI site (Figure 1).

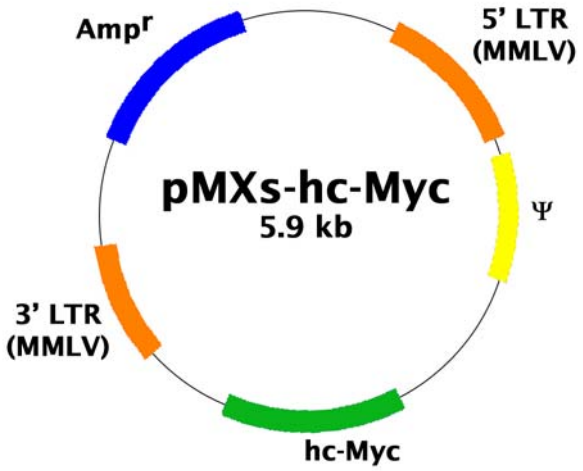

Figure 1. Schematic representation of pMXs-hc-Myc retroviral vector (5.9 kb).

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

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

Warranty

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

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