

pMXs-EF1-Bsd Retroviral Vector

CATALOG NUMBER: RTV-062

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-EF1-Bsd 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 your gene of interest after the EF-1a promoter. The viral *env* gene, produced by the packaging cell line, encodes the envelope protein, which determines the viral infectivity range. Transfection into a packaging 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 MCS for cloning of your gene of interest including miRNA precursor after the EF-1a promoter (Figure 1). For cloning of miRNA precursor, we recommend cloning a miRNA precursor sequence that includes the stem loop plus its native 50-100 bases upstream and downstream.

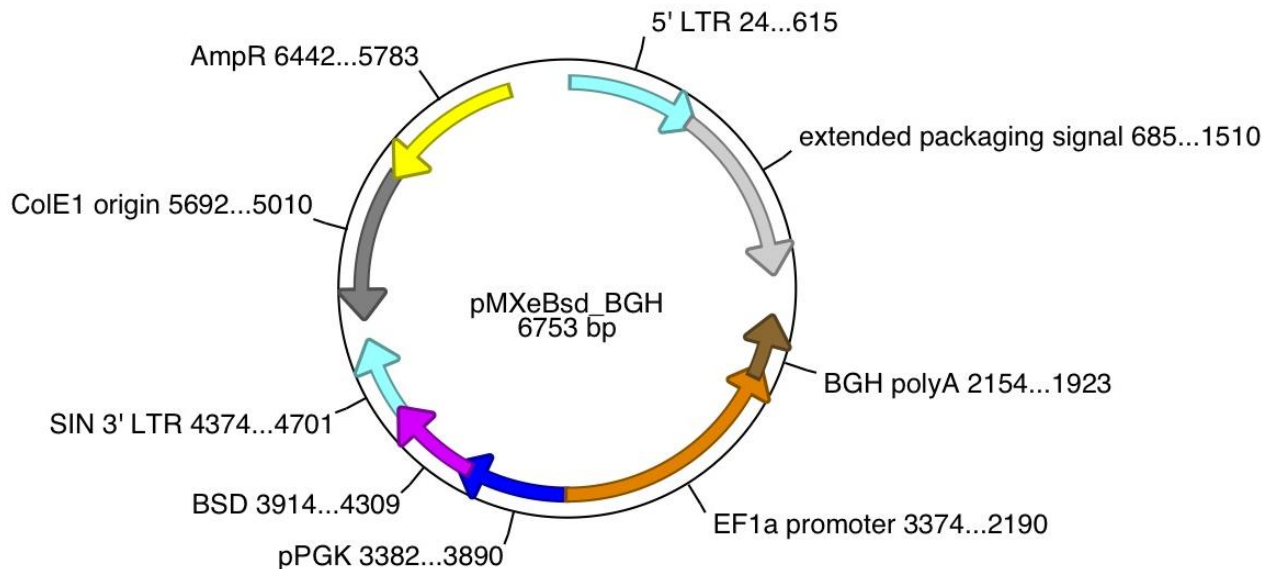


Figure 1. Schematic representation of pMXs-EF1-Bsd retroviral vector.

MCS:

- Enzyme Sites: 5'- BamHI, EcoRI, Sall, NotI -3'
- MCS Sequence:
 ---EF-1a---TGAAGGATCCAACGAATTCAACGTCGACAACGCGGCCGCCTAG---BGH
 PolyA---

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.

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