

## pMXs-IRES-Neo Retroviral Vector

CATALOG NUMBER: RTV-015

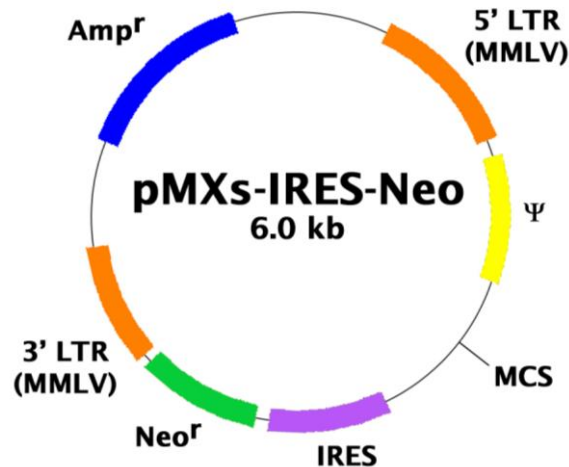
STORAGE: -20°C

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-IRES-Neo retroviral vector (also known as pMXs-IN) 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 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 MCS for cloning of your gene of interest (Figure 1).



**Figure 1.** Schematic representation of pMXs-IRES-Neo retroviral vector.

MCS:

- Enzyme Sites: 5'-BamHI, EcoRI, XhoI, NotI-3'
- MCS Sequence:

```
TTAATTAAGGATCCCAGTGTGGTGGTACGGGAATTCCTGCAGGCCTCGAGGGCCGGC
GCGCCGCGCCGCTACGTAAATT---IRES---neo---
```

### 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.

## Recent Product Citations

1. Kuroda, M. & Halfmann, P.J. (2026). Platelet-like particles released from Ebola virus-infected megakaryocytic cells behave like virus-like particles. *PLoS Pathog.* **22**(2):e1013985. doi: 10.1371/journal.ppat.1013985.
2. da Silva Almeida, A. *et al.* (2025). Building a potent TREM2 agonistic, biparatopic, common light chain antibody. *MABs.* **17**(1):2546554. doi: 10.1080/19420862.2025.2546554.
3. Hassenrück, F. *et al.* (2023). Functional impact and molecular binding modes of drugs that target the PI3K isoform p110 $\delta$ . *Commun Biol.* **6**(1):603. doi: 10.1038/s42003-023-04921-z.
4. Goto, A. *et al.* (2022). Compartmentalization of casein kinase 1  $\gamma$  CSNK1G controls the intracellular trafficking of ceramide. *iScience.* doi: 10.1016/j.isci.2022.104624.
5. Maemura, T. *et al.* (2021). Antibody-Dependent Enhancement of SARS-CoV-2 Infection Is Mediated by the IgG Receptors Fc $\gamma$ RIIA and Fc $\gamma$ RIIIA but Does Not Contribute to Aberrant Cytokine Production by Macrophages. *mBio.* doi: 10.1128/mBio.01987-21.
6. Krzyzanowska, A.K. *et al.* (2021). Activation of nuclear factor-kappa B by TNF promotes nucleus pulposus mineralization through inhibition of ANKH and ENPP1. *Sci Rep.* **11**(1):8271. doi: 10.1038/s41598-021-87665-2.
7. Kuroda, M. *et al.* (2020). Identification of interferon-stimulated genes that attenuate Ebola virus infection. *Nat Commun.* **11**(1):2953. doi: 10.1038/s41467-020-16768-7.
8. Mashima, H. *et al.* (2018). The role of Gaq/Ga11 signaling in intestinal epithelial cells. *Biochem Biophys Res.* **13**:93-98. doi: 10.1016/j.bbrep.2018.01.003.
9. Koso, H. *et al.* (2014). Identification of FoxR2 as an oncogene in medulloblastoma. *Cancer Res.* **74**:2351-2361.

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