pBABEpuro-p53 Retroviral Vector

CATALOG NUMBER: RTV-401 **STORAGE:** -80ºC

QUANTITY AND CONCENTRATION: 100 µL of bacterial glycerol stock

Background

Retroviruses are efficient tools for delivering heritable genes into the genome of dividing cells. Cell Biolabs' retrovirus vector is based on the pBABE vector system, which is derived from Moloney murine leukemia virus (MMLV). The vector provides the viral package signal, transcription and processing elements, and 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. 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 bacterial origin of replication, ampicillin-resistance gene, and puromycin-resistance gene for the growth of infected mammalian cells to select stable cell lines (Figure 1).

The p53 is a tumor suppressor; mutations in p53 are found in most tumor types. p53 tumor suppressor is normally found at low levels, but when DNA damage is sensed, p53 levels rise and initiate protective measures. p53 binds to many regulatory sites in the genome and begins production of proteins that halt cell division until the damage is repaired. If the damage is too severe, p53 initiates the process of programmed cell death, or apoptosis, which directs the cell to commit suicide, permanently removing the damage. Human p53 sequence is cloned into the retroviral vector pBABEpuro at the *Sna*B I site.

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

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4. Zhang W., Guo X. Y., Hu G. Y., Liu W. B., Shay J. W. and Deisseroth A. B. (1994) *EMBO J.* 13:2535-44.

Recent Product Citations

1. Huang, J. et al. (2009). Regulation of the leucocyte chemoattractant receptor FPR in glioblastoma cells by cell differentiation. *Carcinogenesis* **30(2):**348-355.

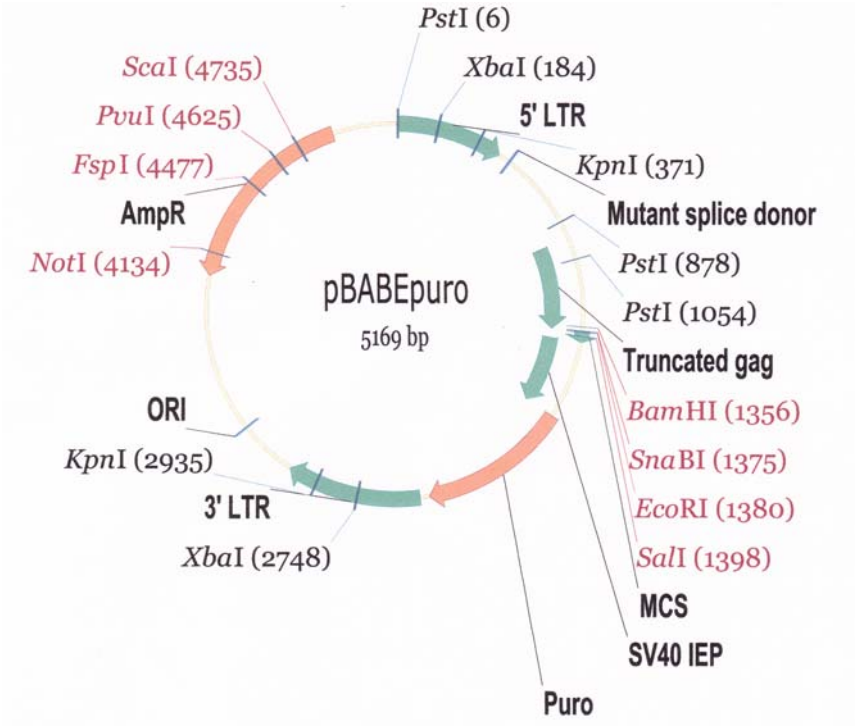

Figure 1. Retroviral Vector Map

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