

pBABEpuro-c-Abl Retroviral Vector

CATALOG NUMBER: RTV-402

STORAGE: -80°C

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 Src family of non-receptor protein tyrosine kinases (Src, Fyn, Lyn, Yes, Lck, Hck, c-Abl, etc) are key regulatory molecules in a variety of intracellular pathways. The c-Abl tyrosine kinase is ubiquitously expressed in mammalian cells and participates in growth factor and integrin signaling, cell cycle regulation, neurogenesis, responses to DNA damage and oxidative stress, and apoptosis. In proliferating cells, c-Abl is found in the cytoplasm and the nucleus. The nuclear c-Abl tyrosine kinase is cell cycle-regulated. Although in its N-terminal, like Src, c-Abl contains an SH3 and an SH2 Src homology domain, as well as a linker that connects the SH2 domain to the catalytic domain; immediately C-terminal to the catalytic domain of c-Abl is an extended region not present in the Src family members. This C-terminal region consists of a proline-rich sequence that binds several adapter proteins followed by a DNA binding domain and a region that interacts with both G-actin and F-actin. A human c-Abl type 1 sequence is cloned into the retroviral vector pBABEpuro at the *Bam*H 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

1. Morgenstern, J. P. and H Land. (1990) *Nuc. Acid Res.* 18, 3587-3596.
2. Coffin, J. M. and H. E. Varmus, *Retroviruses*, Cold Spring Harbor Press, NY.
3. Schuck S, Manninen A, Honsho M, Fullekrug J and Simons K. (2004) *Proc Natl Acad Sci U S A.* 101, 4912-4917.
4. Van Etten, R. A. (1999) *Trends Cell Biol.* 9, 179-186

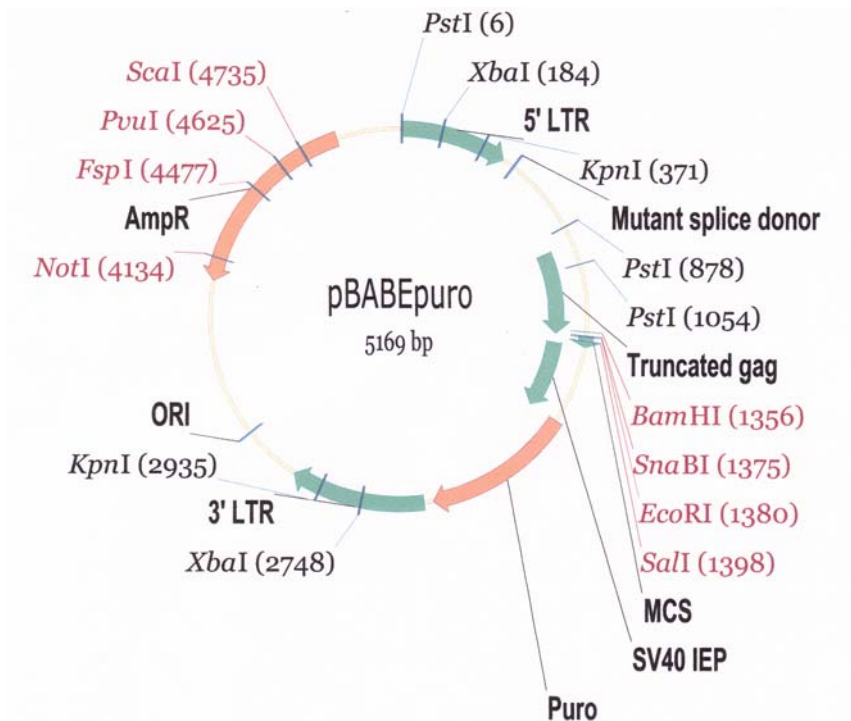


Figure 1. Retroviral Vector Map

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's 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

©2004-2008: Cell Biolabs, Inc. - All rights reserved. No part of these works may be reproduced in any form without permissions in writing.