



## **Lenti-Pac™ HIV Expression Packaging Kit**

**For optimized production of recombinant lentivirus**

**Cat. No. HPK-LvTR-20 (20 transfections)**

**Cat. No. HPK-LvTR-40 (40 transfections)**

### **User Manual**

GeneCopoeia, Inc.  
9620 Medical Center Drive, #101  
Rockville, MD 20850  
USA

301-762-0888 or 866-360-9531

[inquiry@genecopoeia.com](mailto:inquiry@genecopoeia.com)

[www.genecopoeia.com](http://www.genecopoeia.com)

## USER MANUAL

### Lenti-Pac™ HIV Expression Packaging Kit

- I. Introduction
- II. Kit Contents and Storage
- III. Additional Materials Required or Recommended
- IV. Getting Started
- V. Lentivirus Production
- VI. Lentivirus Titration by qRT-PCR
- VII. Lentivirus Titer Estimation by Transduction
- VIII. Transduction of Target Cells with Lentiviruses
- IX. Limited Use License and Warranty

#### I. Introduction

GeneCopoeia has multiple sets of over 40,000 human and mouse ORF expression clones as well as multiple sets of small hairpin RNAi (shRNA) clones against genome-wide target genes from human, mouse, rat, and other mammals in HIV-based lentiviral vector systems. In addition, GeneCopoeia offers precursor microRNA (miRNA) expression clones, miRNA inhibitor clones for all known human, mouse and rat miRNAs, as well as promoter reporter clones for over 20,000 human and 18,000 mouse promoters in a HIV-based lentiviral vector system. HIV- (human immunodeficiency virus) based vectors are currently the most popular lentiviral-based expression systems and are very effective at transducing genes into a wide variety of dividing and non-dividing mammalian cells, both in vitro and in vivo. The lentiviral expression vectors can integrate into the genome of the target cells, resulting in the stable expression of transgenes.

The GeneCopoeia Lenti-Pac™ HIV Expression Packaging System includes an optimized lentiviral packaging plasmid mix, an eGFP positive control plasmid, a new transfection reagent, EndoFectin™ optimized for virus production and TiterBoost™ reagent that further increases the titers 5-10 fold. When combined with GeneCopoeia HIV-based lentiviral constructs the results are high titers and robust expression levels. The Lenti-Pac HIV Expression Packaging System safely ensures efficient expression of recombinant transcripts in mammalian cells.

#### **Advantages of OmicsLink™ lentiviral ORF expression and shRNA clones, miExpress™ precursor miRNA expression and miArrest™ miRNA inhibitor clones**

- High efficiency of gene delivery to virtually all mammalian cell types in vitro as well in vivo
- High expression levels of delivered genes (ORF expression clones)
- High knockdown efficiency against target mRNA transcripts (shRNA clones)
- High expression translation suppression of target genes and/or mRNA cleavage/degradation (miRNA clones)
- Self-inactivation and no unwanted viral replication

#### **High level of safety**

The GeneCopoeia third generation HIV-based lentiviral vector system meet Biosafety Level 2 (BSL-2) requirements based on the criteria published by the Centers for Disease Control and contain the following safety features:

1. A deletion in the enhancer of the U3 region of 3'LTR which ensures self-inactivation of the lentiviral construct after transduction and integration into genomic DNA of the target cells.
2. The RSV promoter upstream of 5'LTR allows efficient Tat-independent production of viral RNA, reducing the number of viral genes that are used in this system.
3. The number of lentiviral genes necessary for packaging, replication and transduction is reduced to three (gag, pol, rev) and are expressed from different plasmids lacking packaging signals and share no significant homology to any of the expression lentiviral vectors, VSV-G expression vector, or any other vector, to prevent generation of recombinant replication-competent virus (RCV).











