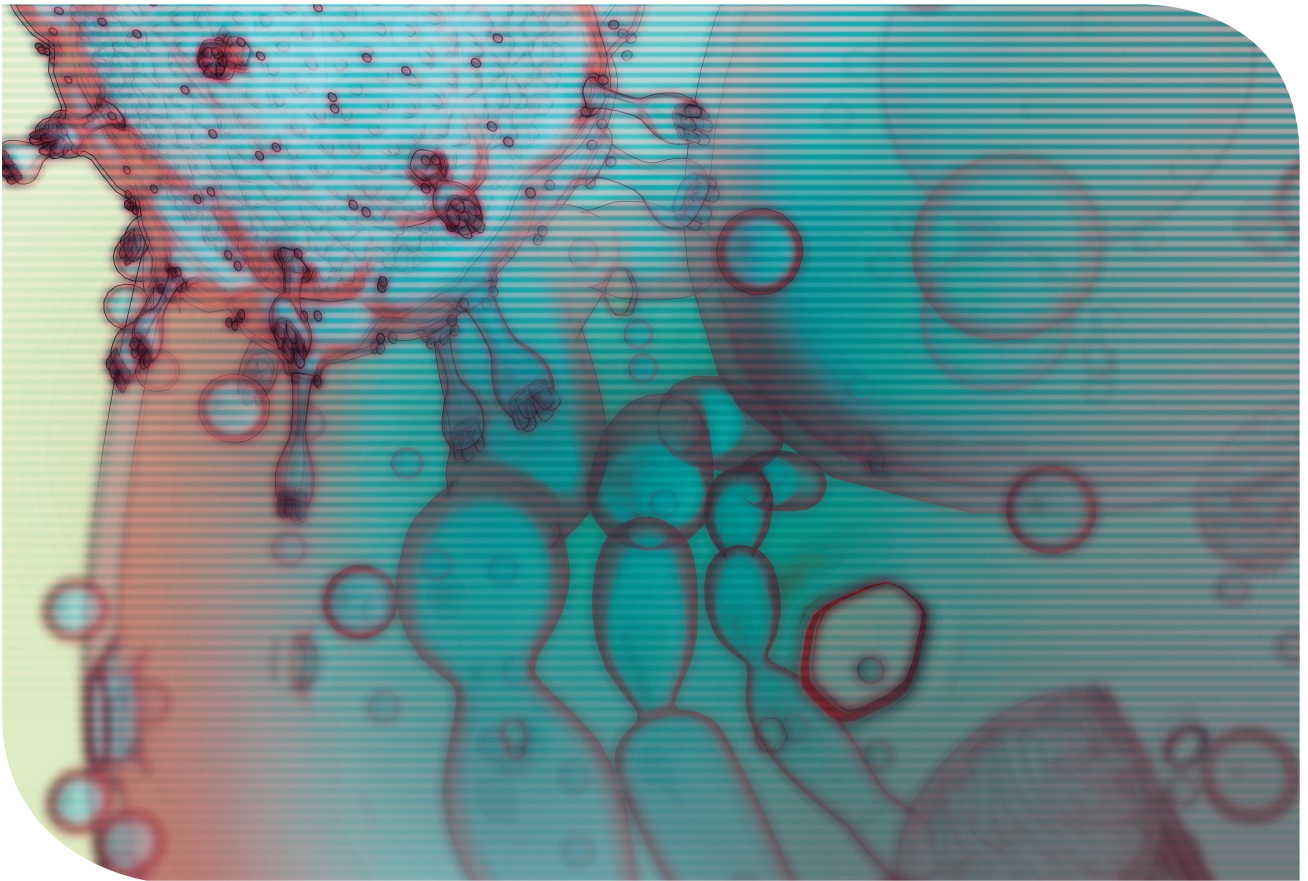


Lentiviral Solutions



Expression-Ready Clones

Lentiviral-based Expression Clones
ORF, Promoter, shRNA, miRNA, Cas9, sgRNA

Packaging Systems

Lentiviral Packaging Kits
293Ta Packaging Cell Line
Lentivirus Concentration Solution
qRT-PCR Lentivirus Titration Kits

Viral Particles

Premade Lentivirus
Budget-Friendly Collection
Custom Order

Why Lentivirus

High efficiency of delivery to broad cell types

The lentiviral expression system is very effective at delivering genetic materials to whole model organisms and a wide range of mammalian cells, including non-dividing and difficult-to-transfect cells, such as neuronal cells, primary and stem cells. The efficiency of lentiviral transduction is close to 100%, making it an ideal delivery system for genes, shRNAs, miRNAs and other genetic materials.

Long-term stable expression of a transgene

The lentiviral expression system consists of sequence elements allowing efficient packaging, transduction and stable integration into the host genome of target cells, thus, enabling long-term high level of transgene expression in target cells.

High level of safety

Lentiviral vectors used for gene transfer are replication-defective and self-inactivated in transduced cells. Multiple packaging plasmids are needed for packaging replication-defective lentiviral particles and the chance of recombination to form complete replicable competent lentivirus (RCL) is minimal.

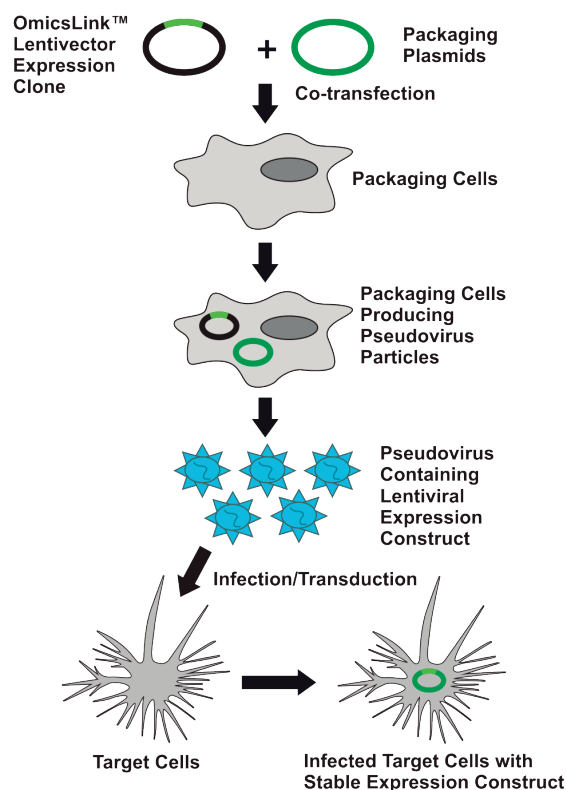


Figure 1. Illustration of how lentiviral-based gene delivery works. Note: Target cells include difficult-to-transfect and non-dividing cells.

GeneCopoeia Complete Lentiviral Solutions

Expression-ready clones

- ORF clones
- shRNA clones
- miRNA precursor clones
- miRNA inhibitor clones
- Promoter reporter clones
- CRISPR-Cas9 clones

Packaging kits and cell line

- Lentiviral packaging kits
- 293Ta packaging cell line
- Lentivirus concentration solution
- qRT-PCR lentivirus titration kits

Transduction-ready viral particles

- Premade lentivirus
- Budget-friendly collection lentivirus
- Custom lentivirus production services

Expression-Ready Clones

GeneCopoeia provides a large collection of lentiviral constructs for expressing ORF cDNAs, shRNAs, precursor miRNAs, or miRNA inhibitors in virtually all mammalian cell types.

OmicsLink™ ORF clones

- Fully sequenced and expression -tested
- Human and mouse genome-wide coverage
- Custom order of de novo gene synthesis
- Largest selection of vectors and fusion tags

Promoter	Selection Marker	Fusion tag (N- and/or C-terminus)		
CMV	Neomycin	HA, 3xHA	HaloTag*	IRES-eCFP
CMV5	Puromycin	Flag	AviTag	IRES-eGFP
EF1a	Hygromycin	Myc	AviTag + IRES-Biotin	IRES-eYFP
CAG	Zeomycin	eCFP	ligase	IRES-mCherry
PDK		eGFP		
SV40		eYFP	IRES-FLuciferase (Firefly)	HA + IRES-eGFP
Inducible		mCherry	IRES-GLuciferase (Gaussia)	Myc + IRES-eGFP
		UBC9	IRES-Neomycin	Flag + IRES-eGFP
			IRES-Puromycin	

*Tev Protease site

OmicsLink™ shRNA clones

- Genome-wide coverage of human, mouse and rat
- Four shRNA constructs per target gene and guaranteed knockdown for at least one construct
- H1 or U6 promoter

Promoter	Selection marker	Reporter gene
H1, U6, Inducible	Puromycin, Hygromycin, Neomycin	eGFP, mCherry

miExpress™ precursor miRNA clones

- Fully sequenced and optimized for high expression and maturation of miRNA inside cells
- Full coverage of human, mouse and rat miRNA in miRBase database

Promoter	Selection marker	Reporter gene
H1, CMV, EF1α	Puromycin, Hygromycin, Neomycin	eGFP, mCherry

miArrest™ miRNA inhibitor clones

- Superior potency, long-lasting inhibition and extremely low cell toxicity
- Full coverage of human, mouse and rat miRNA in miRBase database

Promoter	Selection marker	Reporter gene
H1, U6, CMV	Puromycin, Hygromycin, Neomycin	eGFP, mCherry

GLuc-ON™ promoter reporter clones

- Live cell and real time analysis in dual or single reporter system
- Large collections of human and mouse promoters

Promoter	Selection marker	Reporter gene
Various	Puromycin	GLuc, eGFP, mCherry

Genome-CRISP™ CRISPR-Cas9 clones

- Genome-wide coverage of human, mouse and other species
- Choices of 1-3 constructs per target

Promoter	Selection marker	Reporter gene
U6	Puromycin	mCherry

Packaging Systems

The GeneCopoeia Lenti-Pac™ Packaging Systems provide high titer (up to 10^9 TU/ml), efficient transduction and superior level of protein expression. Developed using GeneCopoeia lentiviral expression-ready clones, Lenti-Pac™ Packaging Kits include an optimized lentiviral packaging plasmid mix, eGFP control clone, EndoFectin™ Lenti, a transfection reagent developed to work with lentiviral-based constructs, and TiterBoost™, a proprietary reagent that further increases titer by 5-10 folds.

Product	Description
Lenti-Pac™ Packaging Kit	Lentiviral packaging mix eGFP control clone EndoFectin™ Lenti transfection reagent TiterBoost™ viral titer reagent
Lenti-Pac™ 293Ta Lentiviral Packaging Cell Line	Low passage and authenticated 1.5×10^6 cells
GeneCopoeia™ GCI-L3 Chemically Competent E. coli Cells	High transformation efficiency with extremely low rates of recombination
Lenti-Pac™ Lentivirus Concentration Solution	Quick and simple concentration of lentiviral particles
Lenti-Pac™ qRT-PCR Lentivirus Titration Kits	Determine the copy numbers of HIV or FIV lentiviral particles

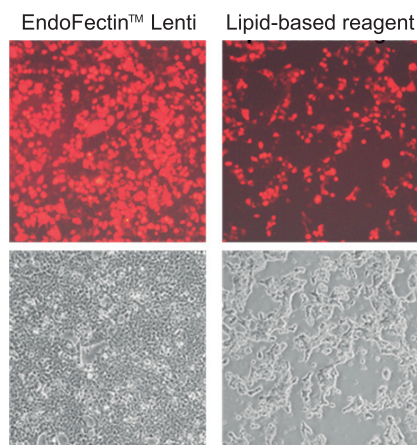


Figure 2. Comparison of Transfection Reagents HEK293T packaging cells were transfected with GeneCopoeia Lentiviral vector expressing mCherry fluorescent protein and Lenti-Pac HIV packaging mix using either EndoFectin Lenti (left panel), or a leading lipid-based transfection reagent (right panel). Expression of mCherry and cell health were checked 48 hours post-transfection using fluorescence microscopy (upper panel) or phase contrast microscopy (lower panel). The titer of lentivirus generated with EndoFectin Lenti reagent was over 20-fold higher than with the lipid-based transfection reagent.

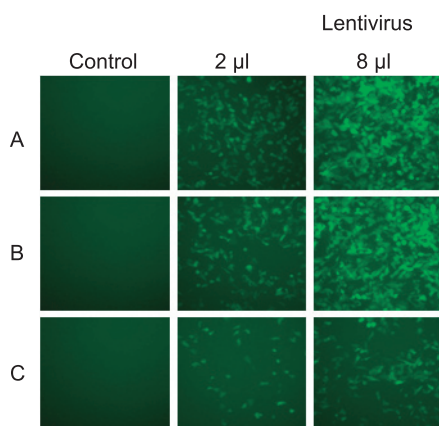


Figure 3. Comparison of Packaging Mixes H1299 cells were transduced with eGFP expressing lentiviral particles generated with three different packaging mixes:
A: GeneCopoeia's Lenti-Pac packaging mix
B: LX packaging mix
C: UM packaging mix

Lentiviral Particles

Lentiviral vectors are potent vehicles for delivering genes into a wide range of cell types including difficult-to-transfect and non-dividing cells. However, producing, concentrating and titrating lentiviral particles are time consuming and require experience to achieve high titers and consistent results.

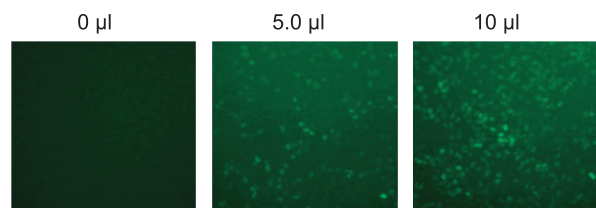
GeneCopoeia's experienced scientific expertise consistently produces high quality and high-titer crude or purified viral particles to meet your research need in an efficient and cost-effective way.

Product	Gene	Description
Premade iPSC gene particles	<ul style="list-style-type: none"> Induced pluripotent stem cell (iPSC) genes -Oct3/4, Sox2, c-Myc, Klf4, Nanog and Lin28 	Transduction-ready 10 ⁷ -10 ⁹ TU/ml (purified) Available in 25 µl and 100 µl sizes
Premade control particles	<ul style="list-style-type: none"> Positive controls-eGFP, mCherry, Firefly luciferase, Renilla luciferase Negative control -no insert 	Transduction-ready 10 ⁸ TU/ml (purified) Available in 25 µl and 100 µl sizes
Custom lentiviral production services (including budget-friendly collection)	<ul style="list-style-type: none"> Any GeneCopoeia expression-ready clones of ORF, shRNAs, precursor miRNAs, miRNA inhibitors, and sgRNAs De novo gene synthesis and cloning services for genes not listed on GeneCopoeia website 	Choices of lentiviral vectors with or without tags Custom-made vectors also available 10 ⁷ -10 ⁹ TU/ml (purified) Available in 50 µl, 100 µl and 200 µl sizes

Figure 4. Transduction of H1299 cells with GeneCopoeia lentiviral particle expressing a large gene.

H1299 cells (in 24-well plate) were transduced with indicated amounts of LP-Y3533-Lv122 in the presence of 5 µg/ml of polybrene. The expression of C-terminal eGFP SMARCA4 fusion protein was checked with a fluorescence microscope 72 hours post-transduction.

ID of Y3533: SMARCA4
Length of SMARCA4 coding region: 4944 bp
Length of SMARCA4 eGFP fusion: > 5.6Kp



Count on us

- High titer purified lentiviral particles
- Stringent quality control and qRT-PCR validation
- Fast delivery
- Cost effective

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