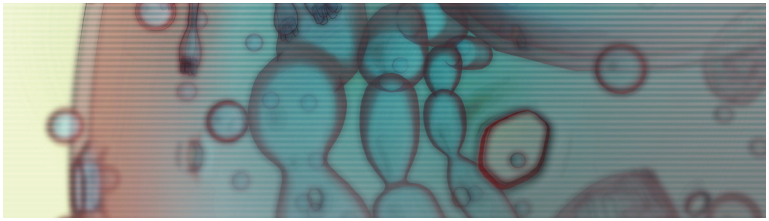
Product List

Lentivirus



ORF

microRNA

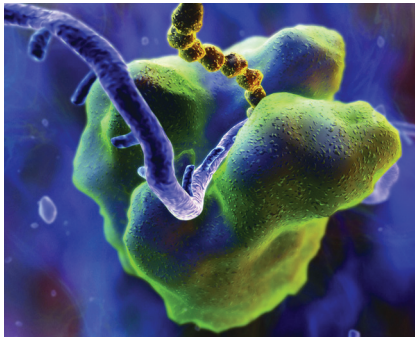
Promoter

shRNA

Clone sets

CRISPR

TALEN



Transfection Reagents, Luciferase Assays

Fluorescent Labeling and Detection

GeneCopoeia™

Expressway to Discovery

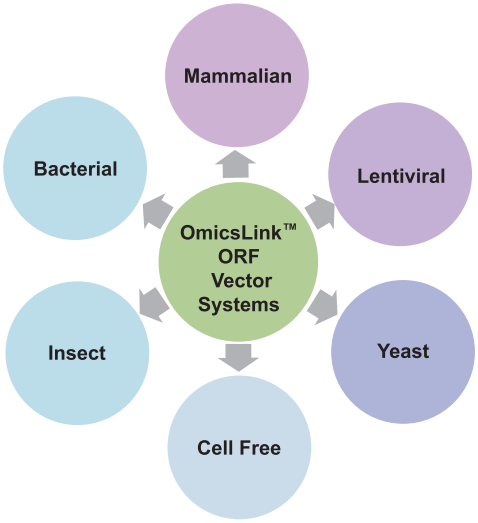
COSMO GENETECH

Index

OmicsLink™ ORF Clones

The largest collections (over 86,000) of expression-ready and sequence-verified human and mouse ORF clones.

- **Untagged protein expression clones**
  Exclusively from GeneCopoeia
- **Largest selection of tag choices**
  To meet all of your needs
- **Genome-wide coverage**
  53,334 human ORFs and 32,886 mouse ORFs
- **Sequence-guaranteed**



Widest choice for vectors

Selected functional tags

Fluorescent tags	eGFP, eYFP, eCFP, mCherry
Multifunctional tags	HaloTag®, AviTag™
Solubility and purification tags	His, SUMO, GST, MBP, Flag, 3xFlag
Antibody Immunoprecipitation tags	HA, cMyc

GLuc-ON™ Promoter Reporter Clones

Gaussia-luciferase (GLuc), eGFP, or mCherry based lentiviral and non-viral promoter reporter clones and assay kits are powerful tools to study transcription regulation.

Advantages

Live cell assay | **Real-time study** | **High sensitivity**

Vector	Reporter gene	Tracking gene	Selection marker	Vector type
pEZX-PG04	Gaussia luciferase (GLuc)	Secreted alkaline phosphatase (SEAP)	Puromycin	Non-viral
pEZX-PG02	Gaussia luciferase (GLuc)	N/A*	Puromycin	Non-viral
pEZX-PF02	eGFP	N/A*	Puromycin	Non-viral
pEZX-PM02	mCherry	N/A*	Puromycin	Non-viral
pEZX-LvPG04	Gaussia luciferase (GLuc)	Secreted alkaline phosphatase (SEAP)	Puromycin	HIV Lentiviral
pEZX-LvPG02	Gaussia luciferase (GLuc)	N/A*	Puromycin	HIV Lentiviral
pEZX-LvPF02	eGFP	N/A*	Puromycin	HIV Lentiviral
pEZX-LvPM02	mCherry	N/A*	Puromycin	HIV Lentiviral
pEZX-LvPM03	tdTomato	N/A*	Puromycin	HIV Lentiviral

Compatible reagent kits

✓ Secrete-Pair™ Dual Luminescence Assay Kits

✓ Secrete-Pair™ Gaussia Luciferase Assay Kits

OmicsLink™ shRNA Clone Collections

OmicsLink™ shRNA clone collections include lentiviral and non-viral vector-based shRNA constructs against genome-wide human, mouse and rat genes. The shRNA expression constructs were designed using a proprietary algorithm to generate high knockdown efficiency with minimal off-target effects.

Advantages

- ***Guaranteed knockdown***
  We guarantee that at least one of the four will have a knockdown effect of 70% or more at the mRNA level
- ***All cell types covered***
  Viral or non-viral for easy gene transfer for virtually all cell types
- ***Markers and reporters***
  mCherry or eGFP reporter genes and Puromycin selection marker
- ***Fully sequenced expression cassettes***
  All shRNA clones are fully sequenced

Vector Options

Promoter	Selection marker	Reporter gene	Viral or non-viral
H1 or U6	Puromycin	eGFP or mCherry	HIV, FIV or plasmid

miTarget™ microRNA 3'UTR Target Clones

Designed for microRNA target identification and functional validation of predicted targets or study of the regulatory effect of microRNA on target gene(s).

Advantages:

- ✓ Live cell analysis
- ✓ Dual-reporter system
- ✓ Compatible luciferase assay kits

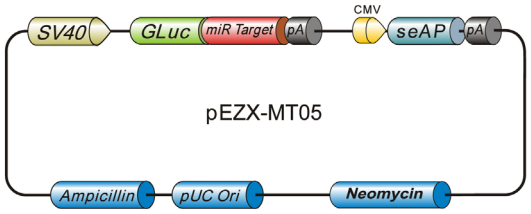


Figure 1. Vector backbone of microRNA 3' UTR target clones

Vector	Reporter gene	Tracking gene	Assay	Feature
pEZX-MT05	Gaussia luciferase (secreted)	Alkaline phosphatase (secreted)	Secrete-Pair™ Dual Luminescence Assay Kit	Live cell assay
pEZX-MT06	Firefly luciferase	Renilla luciferase	Luc-Pair™ Duo-Luciferase Assay Kit 2.0	Cell lysate assay

miExpress™ Precursor microRNA Expression Clones

Hairpin precursor microRNAs of approximately 150 nucleotides are cloned into lentiviral or non-viral eGFP reporter gene vectors for delivery in virtually all cell types. Clone sets are available.

miArrest™ microRNA Inhibitors

GeneCopoeia offers microRNA inhibitors as vector-based expression clones or synthetic oligonucleotides. Vector-based expression clones are available in lentiviral and non-viral vectors. Clone sets are available.

Clone Sets

GeneCopoeia also offers pre-made or custom-selected clone sets. Uniform, high-quality clone sets are ideal for large-scale high content and high-throughput screening studies in functional genomics, proteomics and systems biology.

	Whole Genome Clone Sets	Gene Family Clone Sets*
ORF Clone	• Human mammalian expression clone sets (no tag or with C-terminal Flag® tag) • Human lentiviral expression clone sets (with no tag) • Human Gateway® PLUS™ shuttle clone sets (no promoter)	• OmicsLink™ gene family mammalian expression clone sets (no tag or with C-terminal Flag® tag) • OmicsLink™ gene family lentiviral expression clone sets (with no tag) • Gateway® PLUS™ gene family shuttle clone sets (no promoter)
microRNA Precursor Clone	• Human microRNA precursor clone sets (lentiviral or non-viral) • Mouse genome microRNA precursor clone sets (lentiviral or non-viral) • Rat genome microRNA precursor clone sets (lentiviral or non-viral)	• Human cancer microRNA precursor clone sets (lentiviral or non-viral)
microRNA Inhibitor Clone	• Human microRNA inhibitor clone sets (lentiviral) • Mouse genome microRNA inhibitor clone sets (lentiviral) • Rat genome microRNA inhibitor clone sets (lentiviral)	• Human cancer microRNA inhibitor clone sets (lentiviral)

*Available gene family clone set types: CDs, Cytokines and cytokine receptors, Drug target genes, GPCRs, Histones, Histone modification enzymes, Ion channels, Kinases, Membrane bound proteins, Nuclear hormone receptors, Phosphatases, Protease, Secretory proteins, Transcription factors

- Efficient cloning system based on phage lambda recombination , the same principle as Gateway® technology

This complete system of cloning mixes, cloning vectors, and sequence-verified ORF clones efficiently utilizes the site-specific recombination machinery of phage lambda, the same principle as Gateway® technology.

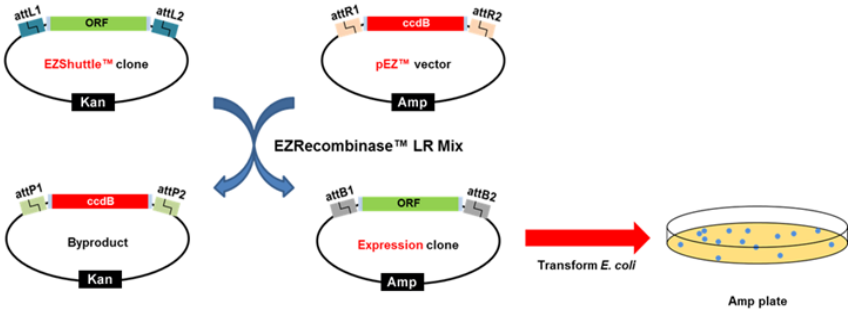


Figure 2. Principle for transfering a DNA fragment from an EZShuttle™ or Gateway® Entry clone to a pEZ™ expression or Gateway® pDEST vector using EZShuttle™ LR recombination cloning.

EZRecombinase™ LR Mix

- Highly-active cloning enzyme mix, with greater activity than Gateway® LR Clonase™
- Compatible with existing Gateway® technology systems.

EZShuttle™ Gateway® PLUS ORF Clones

- All ORFs are fully sequence verified, and are available with or without stop codons
- Flanked by both attL sites and multiple cloning sites for cloning flexibility

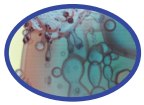
pEZ™ Expression Cloning Vectors

- Choose from a selection of promoters, selection markers, and tags for ready expression.

Lentiviral Solutions

The lentiviral expression system has been proven to be highly effective at delivering genetic materials to difficult-to-transfect cells and even non-dividing cells, such as neuronal cells, primary cells and stem cells, generating long-term expression of the transgene both *in vivo* and *in vitro*.

GeneCopoeia provides complete lentiviral solutions in a flexible, cost effective format.

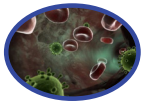


Lentifect™ Purified Lentivirus

Pre-made lentivirus	Controls, Premade ORFs	Next day shipping
Custom lentivirus	Budget-friendly custom lentivirus	Low price and fast delivery for selected ORFs and microRNAs
	Regular custom lentivirus	ORFs, shRNAs, microRNA precursors, microRNA inhibitors and promoter reporters, Cas9 nuclease and sgRNAs

Lentiviral Expression-Ready Clones

- ORF Clones
- Cas9 nuclease and sgRNA Clones
- shRNA Clones
- Promoter Reporter Clones
- Precursor microRNA, microRNA Inhibitor Clones



Lenti-Pac™ HIV and FIV Expression Packaging Systems

- Lentiviral Packaging Kits
- Lentiviral 293Ta Packaging Cell Line
- Lentiviral Concentration Solution
- Lentiviral Titration Kit

Genome Editing Product Portfolio

Genome-CRISP™ CRISPR-Cas9 System

Product /Services	Description
Cas9 nuclease expression clone	Express Cas9 nuclease to create double-strand breaks at your genomic site of interest in combination with sgRNA(s). Lentiviral expression clones are also available.
Cas9 nickase expression clone	Express engineered Cas9 nickase to create single-stranded nicks at your genomic site of interest in combination with sgRNA(s).
sgRNA clones	Transcribe sgRNA(s) to guide Cas9 nuclease to target sites. Various non-viral and lentivaral vector choices, transcribing sgRNA alone or with the Cas9 nuclease expression cassette built in.e
sgRNA libraries	Designed to knockout a group of genes. In lentiviral vectors.

Genome-TALER™ TAL Effectors

Product /Services	Description
TALEN	Sequence-confirmed plasmid pair expressing engineered TALE nuclease specifically targeting your genome site of interest.
TALE-TF	Sequence-confirmed plasmid expressing engineered TALE transcription activator targeting your promoter region of interest.

Advanced Products and Services

Services	Description
IndelCheck™ detection system	Includes the target site PCR kit and the T7 endonuclease I assay kit. Designed to detect CRISPR- or TALEN-mediated insertions/deletions (indels) in your genome edited cells
Donor clones	Knockin desired sequences to your genomic site of interest via CRISPR-Cas9- or TALEN-mediated homologous recombination. Various vector choices with different reporter genes and selection markers are available.
Stable cell line services	Monoclonal stable cell lines with CRISPR-Cas9- or TALEN- mediated genome modifications. Cell banking service available.
Transgenic mouse services	Transgenic mice with CRISPR-Cas9- or TALEN- mediated genome modifications.

Safe Harbor Knockin Kits and Clones

Product	Description
Human AAVS1 safe harbor gene knockin kit	TALEN or CRISPR-Cas9 kit for human AAVS1 safe harbor transgene, with positive control and knockin verification primers. AAVS1 ORF donor cloning vector is optional.
Human AAVS1 knockin ORF clones	AAVS1 knock-in ORF donor clones containing CMV-driven ORF of customer's gene of interest
Mouse ROSA26 safe harbor gene knockin kit	TALEN or CRISPR-Cas9 kit for mouse ROSA26 safe harbor transgene, with positive control and knockin verification primers. ROSA26 ORF donor cloning vector is optional.
Mouse ROSA26 knockin ORF clones	ROSA26 knock-in ORF donor clones containing CMV-driven ORF of customer's gene of interest

Genome-CRISP™ CRISPR-Cas9 Products and Services

The RNA-guided DNA recognition mechanism of CRISPR-Cas9 provides a simple but powerful tool for targeted genome engineering.

Why CRISPR

- RNA-guided sequence- specific genomic DNA recognition regardless of the methylation status
- Capable of editing multiple genes simultaneously
- Similar or greater gene-editing efficiency compared to ZFNs and TALENs
- Simpler and faster design process compared to ZFNs and TALENs. No need to reengineer the nuclease for each new target

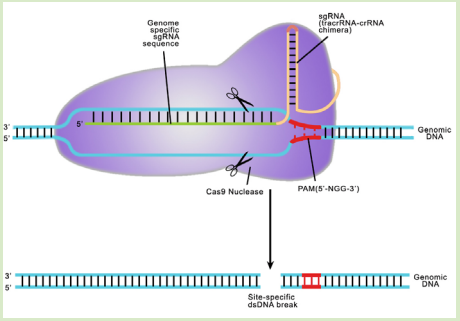


Figure 3. Illustration of CRISPR/Cas9-mediated genome editing

Cas9 expression clones

Catalog#	Description	Selection marker	Reporter gene
CP-C9NU-01	Cas9 nuclease expression clone	Neomycin	mCherry
CP-LvC9NU-01	Cas9 nuclease lentiviral expression clone	Neomycin	N/A
CP-LvC9NU-02	Cas9 nuclease lentiviral expression clone	Neomycin	eGFP
CP-LvC9NU-08	Cas9 nuclease lentiviral expression clone	Puromycin	N/A
CP-C9NI-01	Cas9 nickase expression clone	N/A	N/A
CP-C9NI-02	Cas9 nickase expression clone	Neomycin	mCherry

Genome-CRISP™ sgRNA clones

Vector	Promoter	sgRNA and Cas9	Selection marker/ Reporter gene
pCRISPR-SG01	U6	sgRNA only*	Hygromycin
pCRISPR-LvSG03	U6	sgRNA only*	Puromycin/mCherry
pCRISPR-CG01	U6	CMV-driven Cas9 in the same vector	Neomycin / mCherry
pCRISPR-CG02	U6	CMV-driven Cas9 in the same vector	N/A

Genome-TALER™ Custom TALEN and TAL Effector Services

TAL effectors have been utilized to create site-specific gene-editing tools by fusing target sequence-specific TAL effectors to nucleases (TALENs), transcription factors (TALE-TFs) and other functional domains. These fusion proteins can recognize and bind chromosome target sequences specifically and execute their gene-editing functions, such as gene knockout, knockin (with donor plasmid), modification, activation, repression and more. Unlike zinc fingers' nucleotide triplet recognition, TAL effector domains recognize single nucleotides, which allows researchers to be able to specifically target virtually whatever sequence they want.

GeneCopoeia offers complete custom services for TALE-based targeted genomic modification, including

- TALEN or TALE-TF design and construction
- Donor design and construction
- Functional validation
- Stable cell line establishment
- Transgenic mouse generation

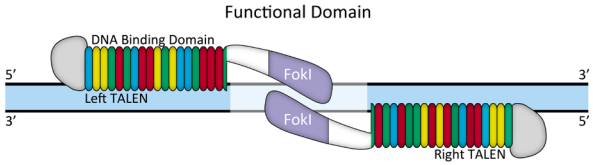


Figure 4. Illustration of TALEN design

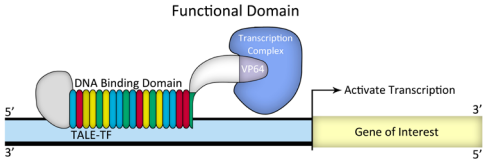


Figure 5. Illustration of TALE-TF design

Comparison between TALENs and CRISPR-Cas9

Property	TALEN	CRISPR-Cas9
Type of recognition	Protein-DNA	RNA-DNA
Recognition mode	Uses a simple, virtually one-to-one code	Uses Watson-Crick base pairing
Methylation sensitivity	Sensitive	Not sensitive
Chromatin structure sensitivity	Sensitive	Sensitive
Off-target activity	Less observed off-target activity than CRISPR	More potential off-target activity than TALENs
Multiplexing	Rarely used	Capable

The IndelCheck™ insertion or deletion detection system is designed to detect CRISPR- or TALEN-mediated insertions/deletions (indels) in your genome edited cells. The complete IndelCheck™ system includes the target site PCR kit and the T7 endonuclease I assay kit. Target site PCR primers are not included, but are available for purchase.

- Validate your CRISPR efficiency before starting a 3- to 6-month KO/KI cell line or mouse line work to avoid experimental failure due to low CRISPR efficiency.
- Speedup your indel detection using a robust integrated system including cell lysis buffer, optimized gDNA PCR mix and primers, as well as T7 endonuclease I assay reagent.

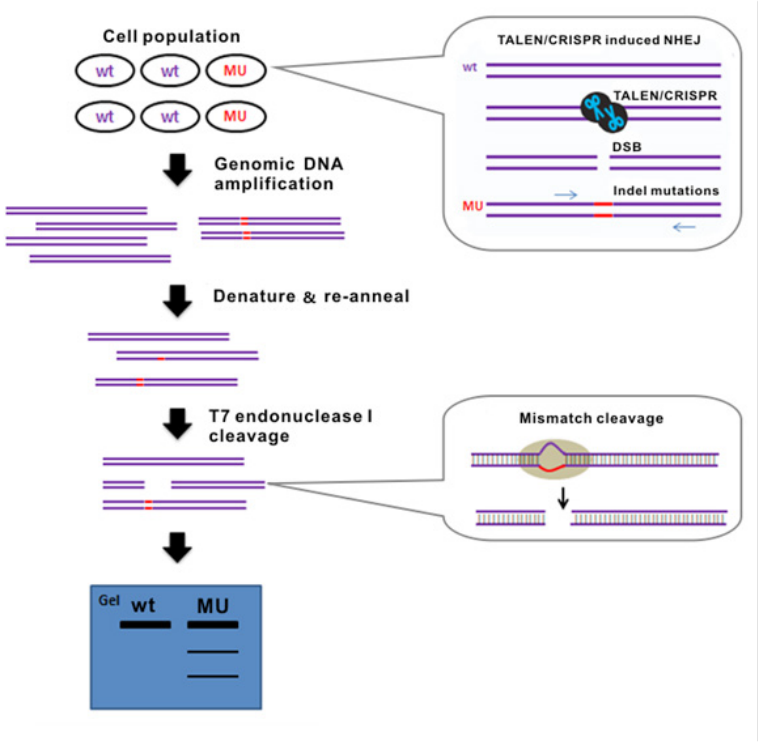


Figure 6. TALEN or CRISPR functional validation by T7 endonuclease I mismatch cleavage assay

After exposing cells to CRISPR or TALEN, a short PCR product is generated from genomic DNA using primers flanking the target site. Denaturation of the PCR product, followed by re-annealing, leads to a population of double strand fragments, some of which contain mismatches. These mismatches are substrates for T7 endonuclease I. If CRISPR or TALEN are active in the cell, then cleavage products will be visible on an agarose gel. This mismatch cleavage assay can be used for either validation of CRISPR sgRNAs or TALEN pairs, or for downstream screening.

Safe Harbor Knockin Kits and Clones

GeneCopoeia offers Human AAVS1 safe harbor gene knockin kits and clones and Mouse ROSA26 safe harbor gene knockin kits and clones, enabling you to transfer your gene of interest, selection marker or other genetic element from a donor plasmid into the human AAVS1 or mouse ROSA26 safe harbor sites using TALEN or CRISPR. Safe harbor integration ensures transcription-competency of your transgene and presents no known adverse effects on the cells.

Safe Harbor Gene Knockin Kits

Catalog Number	Description	CRISPR/TALEN	Contains donor vector
SH-AVS-K100	human AAVS1 safe harbor gene knockin kit	TALEN-based	Yes
SH-AVS-K200		CRISPR-based	Yes
SH-AVS-K000	human AAVS1 safe harbor gene knockin kit (without donor vector)	TALEN-based	No
SH-AVS-K002		CRISPR-based	No
SH-ROS-K100	mouse ROSA26 safe harbor gene knockin kit	TALEN-based	Yes
SH-ROS-K200		CRISPR-based	Yes
SH-ROS-K000	mouse ROSA26 safe harbor gene knockin kit (without donor vector)	TALEN-based	No
SH-ROS-K002		CRISPR-based	No

* Donor vector only comes with -K100 and -K200 kits. For -K000 and -K002 kits, ORF knock-in clones can be can be custom-made by us.

Safe Harbor Gene Knockin Clones

Human AAVS1 and Mouse ROSA26 safe harbor ORF knockin clones are constructed for specifically transferring the ORF of the customer's gene of interest from a donor plasmid into the safe harbor site in human or mouse using Safe Harbor Gene Knockin Kits developed based on TALEN- or CRISPR-Cas9-mediated homologous recombination (HR).

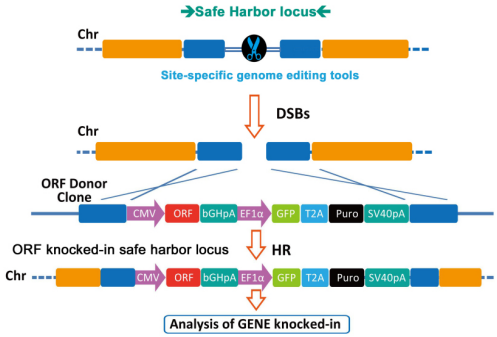


Figure 7. Illustration of TALEN-mediated transgene integration at the safe harbor AAVS1 site of the human genome

GeneCopoeia generates mice carrying CRISPR- or TALEN-mediated modifications, including gene knockout, knockin and transgenes. These modifications are valuable for gene studies, animal model generation, therapeutic research, and other applications. The modified mice are produced by pronuclear injection.

Project type	Time	Product
Constitutive, conditional knockout; gene mutation; knockin, humanization and transgene based on **TALEN/ CRISPR-Cas9**	6-9 months	≥3 F1(♀ & ♂)

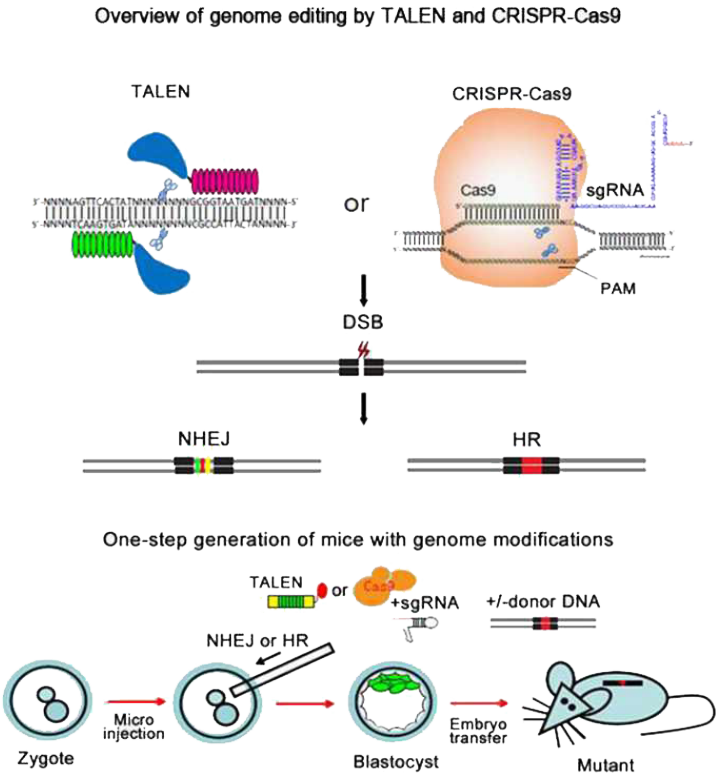
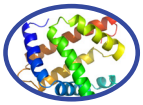


Figure 8. Site-specific genome editing mediated by TALEN or CRISPR, as well as its applications for transgenic mouse generation.

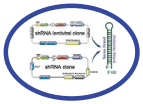
Stable Cell Line Development Services

GeneCopoeia offers state-of-the art services for establishing stable cell lines for protein overexpression, gene knockdown or genome editing that meet your specific research needs.



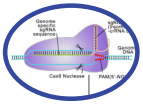
Protein Overexpression - Stable cell lines with ORF clones

Choose to have your own expression cassette integrated into the genome, or from among more than 53,000 human and 32,000 mouse ORFs from GeneCopoeia's extensive ORF clone collection.



Gene Knockdown - Stable cell lines expressing shRNAs

We generate cell lines stably expressing shRNAs targeting a gene of interest. We will design your shRNAs and integrate them into virtually any cell line you choose.



Genome Editing- Stable cell lines constructed with TALEN and CRISPR

We will design the genome editing tool target site, donor constructs used for homologous recombination-mediated applications, transfect your cell line of choice with the genome editing tools, and isolate single or double allele-modified clones. Also can be used with our Safe Harbor Integration system.

Applied BioProbes, a GeneCopoeia company, offers a wide variety of apoptosis assays for measuring multiple components in a choice of assay platforms.

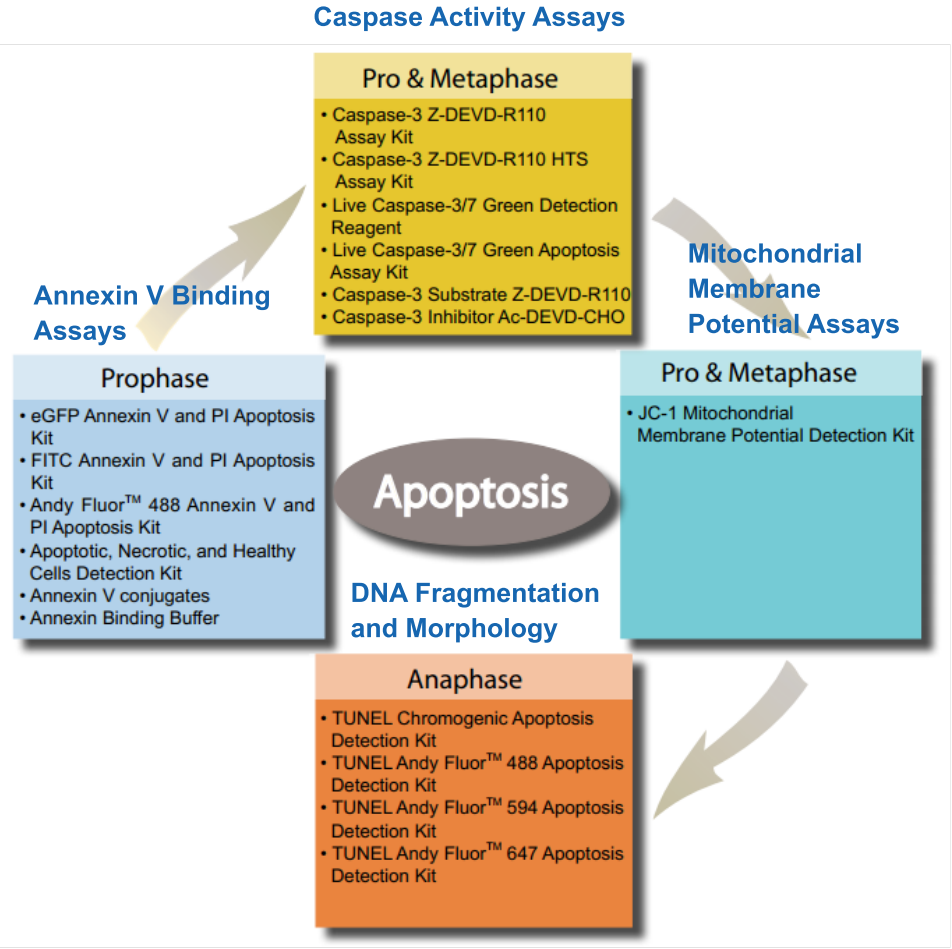
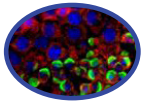


Figure 9. Cell Apoptosis Detection Methods

Cell Proliferation and Viability Assays

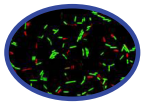
Applied BioProbes, a GeneCopoeia company offers a wide selection of fluorescence- or colorimetric-based assays for the analysis of cell proliferation and viability. These products have been validated on multiple instrument platforms including microscopy, flow cytometry, microplate reader, or high content screening.



Cell Proliferation Assays

A wide selection of validated products to measure cell proliferation by techniques including metabolic activity, tracking DNA content, or new DNA synthesis.

- ✓ Tracking Cell Proliferation by Generation after Generation
- ✓ Tracking New DNA Synthesis
- ✓ Tracking New RNA Synthesis
- ✓ Cell Proliferation Assay based on Cellular DNA Content
- ✓ Cell Proliferation Assay based on Metabolic Activity



Cell Viability Assays

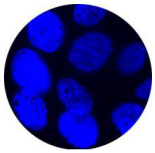
Complete solutions for easy, sensitive determination of cell viability and compound cytotoxicity. These products include imaging, microplate and flow cytometry assays.

- ✓ LIVE-or-DIE™ Cell Viability/Cytotoxicity Assay
- ✓ LIVE-or-DIE™ Fixable Dead Cell Assay
- ✓ Cell Viability Assay based on Metabolic Activity

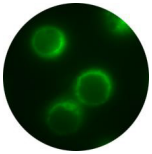
Applied BioProbes, a GeneCopoeia company offers a diverse selection of cell structure probes to specifically stain from organelle and membrane to whole cells. Our cell structure probes are designed for organelle-specific stains for live-cell or fixed-cell labeling. In addition, Applied BioProbes has developed CellGlow™ reagents to label specific structures in live cells with fluorescent proteins.

Features:

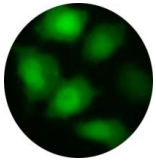
- Bright Fluorescence
- Multicolor selection
- Compatible for cell imaging and flow cytometry
- Validated protocol



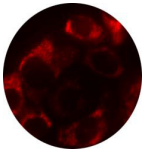
Nucleus Stains



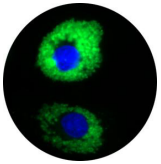
Membrane Stains



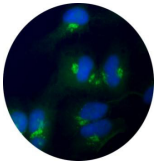
Cytosol Stains



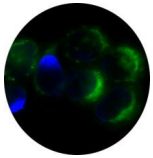
Mitochondria Stains



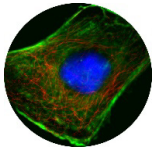
Lysosome Stains



Golgi Complex Stains



Endoplasmic Reticulumus Stains



Cytoskeleton Stains

EndoFectin™ Max

EndoFectin Max is a new lipid-based transfection reagent. This versatile transfection reagent has been tested and optimized for highly efficient transfection of a wide collection of commonly used cell lines as well as many difficult-to-transfect cell lines.

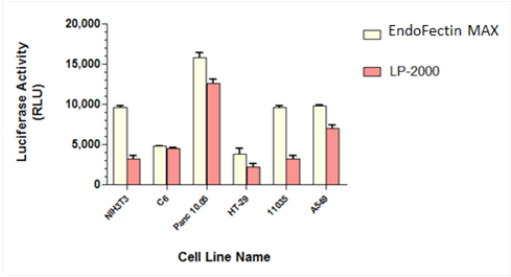


Figure 10. Transfection of cell lines with low transfection efficiency using either EndoFectin™ Max or Lipofectamine® 2000 (LP-2000)

Features and Advantages

- Superior transfection efficiency for a broad range of cell lines compared with commonly used transfection reagents, such as Lipofectamine® 2000
- Low cytotoxicity
- Does not require removal of serum or culture medium
- Does not require washing or changing medium after transfection
- For overexpression, knockdown, knockout, as well as high-throughput applications

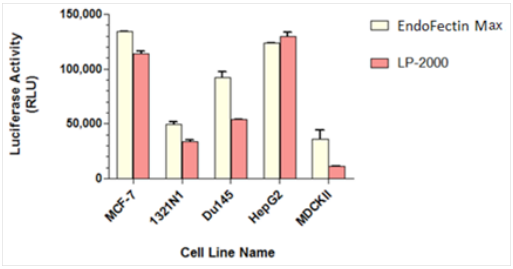


Figure 11. Transfection of cell lines with medium transfection efficiency using either EndoFectin™ Max or Lipofectamine® 2000 (LP-2000)

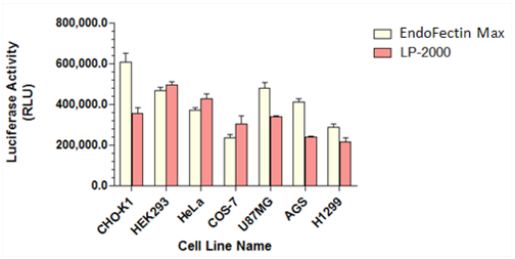


Figure 12. Transfection of cell lines with high transfection efficiency using either EndoFectin™ Max or Lipofectamine® 2000 (LP-2000)

EndoFectin™ HepG2

A new and potent reagent optimized for transfection of the difficult-to-transfect hepatocellular carcinoma cell line HepG2.

EndoFectin™ Lenti

A robust transfection reagent, optimized specifically for lentiviral packaging.

Secrete-Pair™ Dual Luminescence Assay Kit

Designed to analyze the activities of Gaussia Luciferase (GLuc) and Secreted Alkaline Phosphatase (SEAP) in a dual-reporter system side-by-side using the same sample from the cell culture medium.

- Secreted GLuc and SEAP. No need for cell lysis
- Dual-reporter detection enables transfection-normalization for true cross-sample comparison

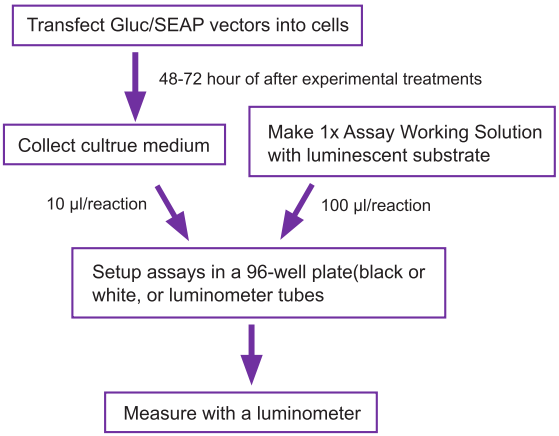


Figure 13. Protocol overview

Secrete Pair™ Gaussia Luciferase Assay Kit

Designed to analyze the activities of Gaussia Luciferase (GLuc)

Luc-Pair™ Duo-Luciferase Assay Kit 2.0 (Firefly and Renilla)

Designed to measure **Firefly and Renilla luciferases** with enhanced stability

Empty cloning vectors for the above luciferase assays are available

ExProfile™ Messenger RNA qPCR arrays

A reliable yet easy-to-use tool to study gene expression profiling using SYBR® Green-based real-time PCR technology. In each 96-well plate, there are up to 84 pairs of experimentally validated qPCR primers and 12 wells of controls used to monitor the efficiency of the entire experimental process – from reverse transcription to qPCR reaction.

	1	2	3	4	5	6	7	8	9	10	11	12
A	1	2	3	4	5	6	7	8	9	10	11	12
B	13	14	15	16	17	18	19	20	21	22	23	24
C	25	26	27	28	29	30	31	32	33	34	35	36
D	37	38	39	40	41	42	43	44	45	46	47	48
E	49	50	51	52	53	54	55	56	57	58	59	60
F	61	62	63	64	65	66	67	68	69	70	71	72
G	73	74	75	76	77	78	79	80	81	82	83	84
H	GDC	GDC	HK1	HK2	HK3	HK4	HK5	HK6	RT	RT	PCR	PCR

Messenger RNA qPCR Array Layout (96-Well)

- **Wells 1-84**: Pathway or disease related genes
- **HK1-6**: Housekeeping genes as endogenous positive controls as well as for array normalization
- **GDC**: Genomic DNA controls to detect genomic DNA contamination
- **RT**: Spike-in reverse transcription controls to monitor the efficiency of the RT reaction
- **PCR**: Positive PCR controls to verify the PCR efficiency

Category	Product	Description
Messenger RNA qPCR Arrays	ExProfile™ cancer messenger RNA qPCR arrays	Cancer related 21 different cancer types available
	ExProfile™ pathway messenger RNA qPCR arrays	Disease- or other focus-group related
	ExProfile™ disease and gene group messenger RNA qPCR arrays	Disease and gene group focused
Supporting Reagents	RNAzol® RT RNA isolation kit All-in-One™ first-strand cDNA synthesis kit All-in-One™ qPCR mix	Optimized to work together with qPCR arrays and validated primers
Validated Primers	All-in-One™ validated qPCR primers	Sequenced verified and experimentally validated
Custom PCR Arrays & Services	Custom messenger RNA qPCR arrays and services	96-well format and 384-well format In-house array processing and data analysis
Data Analysis Tool	Online data analysis tool	Free and easy-to-use

miProfile™ microRNA qPCR Arrays

Designed for profiling the expression of pre-defined or customized sets of microRNAs in various tissues or cells of interest to discover the microRNAs that are specifically important to your research. Each 96-well plate contains up to 84 pairs of PCR primers (forward: microRNA-specific primer; reverse: universal primer), which are pre-deposited in each well.

Category	Product	Description
microRNA qPCR Arrays	miProfile™ miRNome qPCR arrays	Human: Covering 1,700+ microRNAs based on miRBase v18 Mouse: Covering 800+ microRNAs based on miRBase v18
	miProfile™ cancer microRNA qPCR arrays	Cancer related Human: 15 cancer types available Mouse: 11 cancer types available
	miProfile™ disease and focus group microRNA qPCR arrays	Disease- or other focus-group related
Supporting Reagents	RNAzol® RT RNA isolation kit All-in-One™ qPCR mix All-in-One™ microRNA qRT-PCR detection kit All-in-One™ microRNA first-strand cDNA synthesis kit	Optimized to work together with microRNA qPCR arrays and validated primers
Validated Primers	All-in-One™ microRNA qPCR validated primers	Sequenced verified and experimentally validated
Custom PCR Arrays & Services	Custom microRNA qPCR arrays and services	96-well format and 384-well format In-house array processing and data analysis
Data Analysis Tool	Online data analysis tool	Free and easy-to-use

qPCR Reagents and Validated Primers

All-in-One™ qPCR Reagents

	Messenger RNA qPCR expression	microRNA qPCR expression
RNA isolation	• RNAzol® RT RNA Isolation Reagent	• RNAzol® RT RNA Isolation Reagent
RT reaction	• All-in-One™ First-Strand cDNA Synthesis Kit	• All-in-One™ microRNA First-Strand cDNA Synthesis Kit
qPCR reaction	• All-in-One™ qPCR Mix	• All-in-One™ qPCR Mix • All-in-One™ microRNA qRT-PCR Detection Kit

All-in-One™ qPCR Validated Primers

	Messenger RNA qPCR Primers	microRNA qPCR Primers
Species	• Human, mouse and rat	• Human, mouse and rat
Features	• Sequenced verified • Experimentally validated • Optimized to work with All-in-One™ qPCR reagents	• Sequenced verified • Experimentally validated • Optimized to work with All-in-One™ microRNA qRT-PCR Detection Kit

GreenView™, GreenView ™ Plus, GreenView ™ Ultra, RedView™

Ultra-sensitive, non-toxic nucleic acid gel stains to EB (Ethidium Bromide)

Cat. No.	Product	Unit Size
N100	GreenView™, 10,000X in H_2O	500 µL
N101	GreenView™ Plus , 10,000X in DMSO	500 µL
N102	RedView™, 10,000X in DMSO	500 µL
N103	GreenView™ Ultra, 10,000X in DMSO	500 µL

Advantages

- √ Non-toxic and safer than EB
- √ Ultra-sensitive
- √ High Stability
- √ Easy to use
- √ Flexible for different procedures
- √ Compatible with standard instruments
- √ Compatible with downstream applications

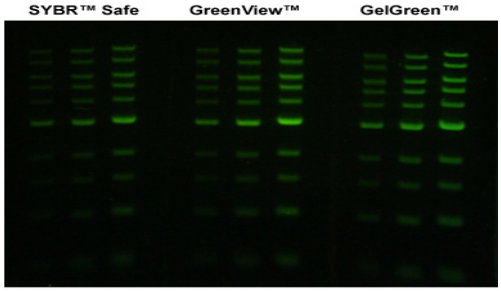


Figure 14. Comparison results for GreenView™ with SYBR Safe™ and GelGreen™. Staining results of a 1% agarose gel in TBE buffer. Two-fold serial dilutions of 1 kb DNA ladder were loaded into 3 lanes of each gel in the amounts of 100 ng, 50 ng and 25 ng (left to right)

SafeGreen™ & SafeRed™ Loading Dyes

Designed specifically for staining DNA prior to electrophoresis

SafeGreen™ and SafeRed™ are next generation fluorescent nucleic acid gel stains, which has extraordinary binding affinity to ensure the dye/DNA association remains stable during the electrophoresis. Thus, samples can be prestained with SafeGreen™ or SafeRed™ before electrophoresis, thereby reducing the hazard inherent in handling large volumes of ethidium bromide (EB).

Cat. No.	Product	Unit Size
D012	SafeGreen™ Loading Dye	1 mL
D013	SafeRed™ Loading Dye	1 mL

Advantages

- √ Ready to use
- √ Ultra-sensitive
- √ Safer than EB
- √ Easy to use
- √ Low cost

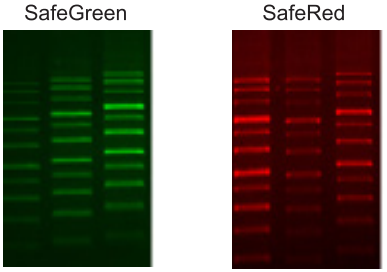


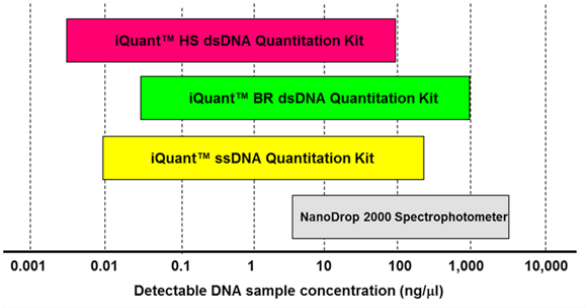
Figure 15. Gel stain results with SafeGreen and SafeRed premixed with DNA ladder. Two-fold serial dilutions of 1 kb DNA Ladder were mixed with SafeGreen and SafeRed at 5:1 ratio, then loaded onto 3 lanes of each gel. Gels were directly imaged on a UV transilluminator.

Nucleic Acid Quantitation

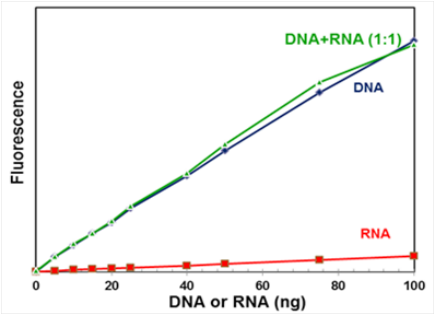
iQuant™ DNA or RNA Quantitation Kits allow precise quantitation of DNA or RNA samples across a wide range of concentrations. Unlike absorbance-based nucleic acid quantitation, fluorescence-based DNA or RNA quantitation is highly sensitive and selective for DNA or RNA, and provides more accurate DNA or RNA concentration in the presence of common contaminants, including free nucleotides, protein, detergents and salts

Features

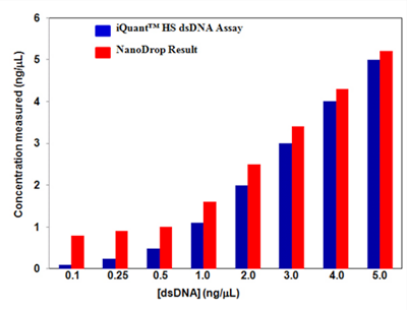
Higher sensitivity: 100 times more sensitive than NanoDrop



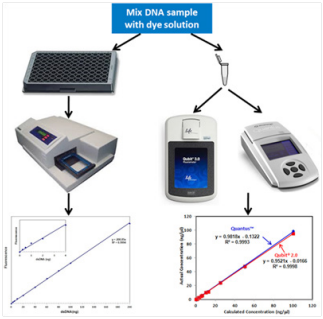
Excellent selectivity for DNA, even in the presence of an equal mass of RNA



More accuracy: Unaffected by the presence of proteins, free nucleotides



Instrument compatibility: Assay can be performed using a fluorescence plate reader, or a fluorometer such as Qubit® or Quantus™



Protein Detection

Protein gel stains:

- ✓ Coomassie® Blue Fast Stain
- ✓ eLuminol™ Protein Gel Stain
- ✓ Phos-Tag™ Phosphoprotein Gel Stain

ECL Western Blotting Detection Kit

	Coomassie® Blue Fast Stain	eLuminol™ Protein Gel Stain	Phos-Tag™ Phosphoprotein Gel Stain
Sensitivity	20 ng	0.5 ng	1 ng
Ease of use	Ready to use	Supplied as stock solution	Ready to use
Time required	2 hr (standard) 20 min (microwave)	90 min (standard) 30 min (microwave)	4 hr (standard) 2 hr (microwave)
Detection method	colorimetric	fluorescent	fluorescent
MS spec. compatible	Yes	Yes	Yes

Protein Quantification Kits

- ✓ Bradford Protein Assay Kit
- ✓ BCA Protein Assay Kit

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Expressway to Discovery

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