GenTarget Inc

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Ultra titer lentivirus product manual

Catalog#	Product Name	Amounts
ULVP-001	GFP (CMV, Bsd), Ultra titer lentivirus	50 ul ($1x10^9$ IFU/ml)
ULVP-340B	GFP-2a-Puromycin (CMV promoter), Ultra titer lentivirus	
ULVP-426B	GFP-2a-Puromycin (**EF1a** promoter), Ultra titer lentivirus	
ULVP-300	GFP (CMV, Neo), Ultra titer lentivirus	
ULVP-023	RFP (CMV, Bsd), Ultra titer lentivirus	
ULVP-309B	RFP-2a-Puromycin (CMV promoter), Ultra titer lentivirus	
ULVP-429B	RFP-2a-Puromycin (**EF1a** promoter), Ultra titer lentivirus	
ULVP-323	Luciferase (firefly)-2A-GFP (CMV, Bsd), Ultra titer lentivirus	
ULVP-436	Luciferase (firefly)-2A-GFP (**EF1a**, Bsd), Ultra titer lentivirus	
ULVP-020	Luciferase (firefly)-2A-GFP (CMV, Puro), Ultra titer lentivirus	
ULVP-437	Luciferase (firefly)-2A-GFP (**EF1a**, Puro), Ultra titer lentivirus	
ULVP-009	Luciferase (firefly)-2A-RFP (CMV, Bsd), Ultra titer lentivirus	
ULVP-324	Luciferase (firefly)-2A-RFP (CMV, Puro), Ultra titer lentivirus	

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ULVP-337	CRE-2A-GFP (CMV, Bsd), Ultra titer lentivirus	
ULVP-408	CRE-2A-GFP (CMV, Neo), Ultra titer lentivirus	
ULVP-407	CRE-2A-GFP (CMV, Puro), Ultra titer lentivirus	
ULVP-013	CRE-2A-RFP (CMV, Bsd), Ultra titer lentivirus	
ULVP-027	CRE-2A-RFP (CMV, Neo), Ultra titer lentivirus	
ULVP-338	CRE-2A-RFP (CMV, Puro), Ultra titer lentivirus	
ULVP-434	Luciferase (firefly) (**EF1a**, Puro), Ultra titer lentivirus	

Storage: < -70 °C, avoid repeat freeze/thaw cycles. Stable for > 6 months.

Product Description:

Lentiviral particles or lentivirus is a gene delivery tool produced from lentivectors for gene expression or knockdown. It is a relative simple, yet highly efficient tool for the establishment of transgenic animals and for the mammalian genomic editing.

Also, lentivirus became the desirable gene therapy approaches in part because of their ability to incorporate into genomic DNA with high efficiency, especially in cells that are not actively dividing. And it promotes persistent transgene expression (over-expression or knockdown functional genetics).

Lentivirus can simply transduced into mammalian sperm cells or gremline cells, or stem cells for transgenic animal generation. However, for a robust and high efficient (or high success rate) transgenesis, the vivo manipulation of spermatogonial stem cells requires high quality, ultra-titer lentivirus. To meet the needs for lentivirus with very high titer, GenTarget produced the purified, concentrated Ultra-titer lentivirus which are purified and concentrated via our proprietary protocols, and provided in **50 ul of PBS** solution at titer of **1 x 10^9 IFU/ml.** GenTarget's lentivectors are VSV-G pseudotyped, Human Immunodeficiency Virus-1 (HIV) based lentiviral system with the most advanced Bio-safety features (including SIN).

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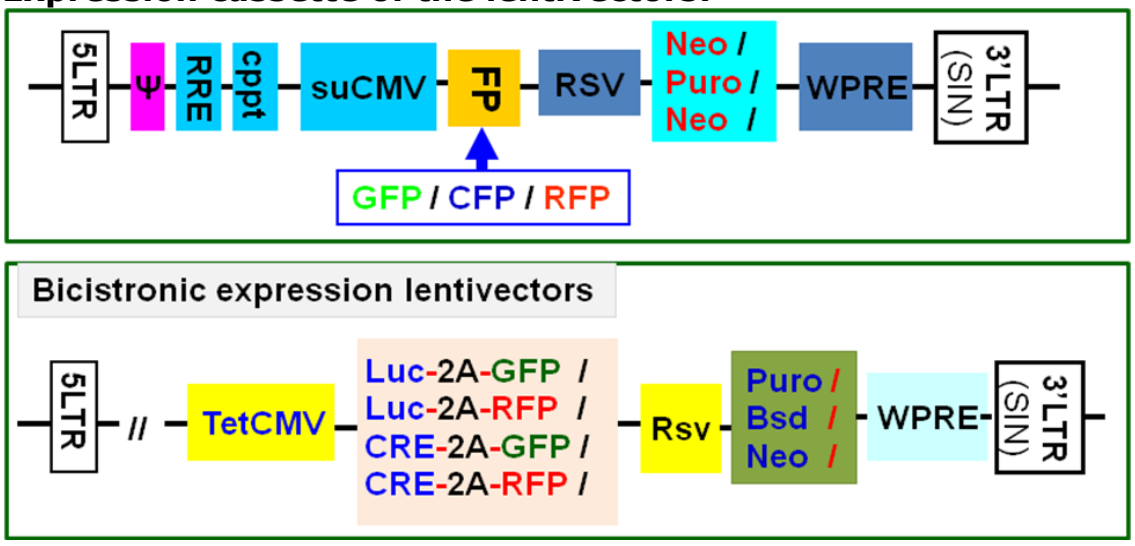
The Ultra-titer lentivirus can be used for the hard-to-transduced cells and for in vivo manipulation of sperm cells, or stem cells.

Each premade ultra-titer lentivirus expresses a fluorescent marker only (GFP or RFP), or co-express the firefly luciferase and a fluorescent marker under the same promoter, or co-express the neulear penetrated CRE recombinase and a fluorescent marker under the same promoter, containing an antibiotic selection marker, Blasticidin (Bsd), Puromyin (Puro) or Neomycin (Neo). See the core-structure of the expression lentivectors below.

Expression lentivector was co-transfected with GenTarget's proprietary packaging mix (Cat# **HT-pack**) into 293T cells (cat# **TLV-C**). The pre-made lentivirus are VSV-G pseudotyped viruses, concentrated into PBS solution with sucrose stabilizer. Each lot of virus is validated lot by lot, and quality is guaranteed.

Particles are provided in PBS solution as 50 ul aliquots.

Expression cassette of the lentivectors:



For general questions about our ready-to-use lentiviral particles, please see FAQ for pre-made lentiviral particles (.pdf) on our website. (http://www.gentarget.com/pdf/FAQ-Premade-Lentiviral-particles.pdf).

For the general lentivirus usage protocol, please visit our website (http://www.gentarget.com/wp-content/uploads/2013/07/Transduction-protocols.pdf).

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Note: Filter wavelength settings:

GFP filter: ~Ex450-490 ~Em525;
RFP filter: ~Ex545 ~Em620;

Safety Precaution:

Gentarget lentiviral particles adapts must advanced lentiviral safety features (using the third generation vectors with self-inactivation SIN-3UTR), and the premade lentivirus is replication incompetent. However, please use extra caution when using lentiviral particles. Use the lentiviral particles in Bio-safety II cabinet. Wear glove all the time when handling Lentiviral particles! Please refer CDC and NIH's guidelines for more details regarding to safety issues.

References:

1. J Virol. 2000 November; 74(22): 10778–10784.
2. Hum Gene Ther (2003) 14: 1089-105.
3. Mol Ther (2002) 6: 162-8.
4. NIH Guidelines for Biosafety Considerations for Research with Lentiviral Vectors. (Link).

Warranty:

This product is for research use only. It is warranted to meet its quality as described when used in accordance with its instructions. GenTarget disclaims any implied warranty of this product for particular application. In no event shall GenTarget be liable for any incidental or consequential damages in connection with the products. GenTarget's sole remedy for breach of this warranty should be, at GenTarget's option, to replace the products.

Attachment: GenTarget's pre-made lentivirus product categories.

Product Category	Product Description (please click into each category's page)
Pathway Reporter	Repoter Lentivirus for all kinds of pathway screening assays
Cell Immortalization	Lentivirus for cell immortalization: Large T-antigen, hTERT, EBNA1/EBNA2, HpV16-E6/E7, Adenovial E1A, Kras_G12V, HOXA9, et al.
ImmunoOncology Research	Lentivirus products for immuno therapy research: CAR and TCR; Assay Cell Lines for T-cell targeted killing assay and other cell-based assays; over-expression lentivirus products for the immune response targets; Cell surface antigens (CDs); immune checkpoint / Receptors; CRISPR gene Repair and knock-IN lentivirus; CRISPR knockout lentivirus;

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Product Category	Product Description (please click into each category's page)
CAR-T, TCR Lentivirus	**CARs** Lentivirus: Anti-CD19 /CD20 /CD22 /BCMA /hHER2 /HLA-A2 /TGFβ; **TCRs**: MART-1/ NY-ESO1/ CD1d-α-GalCer/ TRαV3-F2A-TRβV5-6;
CRISPR Gene Editing	Preamde lentivirus express humanzied wild-type **Cas9** endonuclease, the **dCas9**, gRNAs, **CRISPR** gene editing research
Epigenomic: CRISPRi and CRISPRa	"**dCas9-Protein**" fusion Lentivirus for epigenomic modification, resulted in CRISPR interference (CRISPRi) or activation (CRISPRa).
Cell-Specific Reporter	a set of reporter lentiviruses to express a luminescence or fluorescent reporter (firefly Luciferase, Renilla luciferase, RFP or GFP fluorescent marker) under a tissue specific promoter
Infectious Antigens	Llentivirus that express all kinds of infectious antigens with C-term 6His-tag.
Virus Like Particles (VLP)	Lentiviral Like Particles, pseudo-typed with a different envelope proteins.
Non-integrating LV	Integration Defective Lentivirus, express different targets for transient expression without the unwanted insertional mutagenesis.
shRNA Knockdown	Knockdown verifeid and customized shRNA lentivirus for target knockdown,
microRNA lentivirus	Premade lentivirus expression human or mouse **precursor miRNA**. And **anti-miRNA** lentivector and virus for human and mouse miRNA.
Anti-miNA lentivirus	Pre-made lentivirus expression a specific anti-miRNA cassette.
Human and mouse ORFs	Premade lentivirus expressin a **human, mouse or rat** gene with RFP-Blastididin fusion dual markers.
Luciferase expression	Premade lentivirus for all kinds of luciferase protein expression**: firefly and Renilla, Red-Luc and more,** with different antibiotic selection markers.
Fluorescent Markers	Lentivirus express all commonly used fluorescent proteins: GFP, RFP, CFP, BFP YFP, niRFP, unstable GFP and others.

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Product Category	Product Description (please click into each category's page)
Luminescent Imaging	Lentivirus express Nano-Latern as Bio-probes for in vivo imaging of sub-cellular structural organization and dynamic processes in living cells and organisms
Sub-cellular Imaging	Lentivirus contain a well-defined organelle targeting signal fusioned to a fluorescent protein, great tools for live-cell imaging and for dynamic investigation of sub-cellular signal pathways.
Cytoskeleton Imaging	A fluorescent marker (GFP, RFP or CFP) fusion with a cellular structure protein, provides a convenient tool for visualization of cytoskeletal structure
Unstable GFP	Lentivirus express the the destabilized GFP (uGFP) which provides fast turnover responses in signal pathway assay and in knockdown / knockout detection
near-infrared RFP	The near-infrared Red fluorescent (niRFP) expression Lentiviurs provides the whole-body images with better contrast and brighter images
Fluorescent-ORF fusion	Pre-made lentivirus expression a "**GFP/RFP/CFP-ORF**" fusion target.
CRE recombinase	Premade lentivirus for expressing **nuclear permeant CRE** recombinase with different flurescent and antibiotic markers.
CRE, Flp ColorSwtich	Lentivirus expressing "LoxP-GFP-Stop-LoxP-RFP" or "FRT-GFP-Stop-FRT-RFP" cassette, used to monitor the CRE or Flp recombination event in vivo.
SEAP Reporter	lentivirus expressing SEAP under different promoters (TetCMV, EF1a, CAG, Ubc, mPGK, Actin-beta or a signal pathway responsive promoter),
TetR Repressor	Premade lentivirus expressin TetR (tetracycline regulator) protein, the repressor protein for the inducible expression system.
rtTA Expression	rtTA binds to the tetracycline operator element (TetO) in the presence of doxycycline (Dox). Used for Tet-On /OFF inducible system.
iPS factors	Premde lentivirus for human and mouse iPS **(Myc, NANOG, OCT4, SOX2, FLF4**) factors with different fluorescent and antibitoic markers
LacZ expression	Express different full length **β- galactosidase (lacZ)** with different selection markers

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Negative control lentiviruses	Premade **negative control lentivirus with different markers**: serves as the negative control of lentivurs treatment, for validation of the specificity of any lentivirus target expression effects.
Other Enzyme expression	Ready-to-use lentivirus, expressing a specific enzymes with different selection markers.
Ultra titer lentivirus	Ultra-titer lentivirus used for the hard-to-transduced cells and for in vivo manipulation of sperm cells, or stem cells.