



Pre-made Lentiviral Particles for Fluorescent Proteins

Catalog#	Product Name	Amounts
Fluorescent Reporter Lentivirus driven by CMV promoter:		
<u>LVP001</u>	GFP (CMV, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP001-PBS</u>	GFP (CMV, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP002</u>	GFP-His-2A-RFP (Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP002-PBS</u>	GFP-His-2A-RFP (Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP011</u>	CFP (CMV, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP011-PBS</u>	CFP (CMV, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP012</u>	YFP (CMV, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP012-PBS</u>	YFP (CMV, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP023</u>	RFP (CMV, Bsd) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP023-PBS</u>	RFP (CMV, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP299</u>	RFP (CMV, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP299-PBS</u>	RFP (CMV, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP300</u>	GFP (CMV, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP300-PBS</u>	GFP (CMV, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP306</u>	CFP (CMV, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP306-PBS</u>	CFP (CMV, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP307</u>	YFP (CMV, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP307-PBS</u>	YFP (CMV, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul



<u>LVP309</u>	RFP (CMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP309-PBS</u>	RFP (CMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP340</u>	GFP (CMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP340-PBS</u>	GFP (CMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP342</u>	CFP (CMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP342-PBS</u>	CFP (CMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP471</u>	YFP (CMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP471-PBS</u>	YFP (CMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP361</u>	BFP (CMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP361-PBS</u>	BFP (CMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP362</u>	BFP (CMV, Bsd) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP362-PBS</u>	BFP (CMV, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP363</u>	BFP (CMV, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP363-PBS</u>	BFP (CMV, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1224</u>	RFP (CMV, Zeo) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1224-PBS</u>	RFP (CMV, Zeo) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1226</u>	RFP (CMV, Hygro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1226-PBS</u>	RFP (CMV, Hygro) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1231</u>	GFP (CMV, Zeo) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1231-PBS</u>	GFP (CMV, Zeo) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1233</u>	GFP (CMV, Hygro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1233-PBS</u>	GFP (CMV, Hygro) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1334</u>	GFP (CMV, No antibiotics) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul



<u>LVP1334-PBS</u>	GFP (CMV, No antibiotics) Lentivirus, Concentrated	1x10 ⁸ IFU/ml x 200ul
<u>LVP1336</u>	RFP (CMV, No antibiotics) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1336-PBS</u>	RFP (CMV, No antibiotics) Lentivirus, Concentrated	1x10 ⁸ IFU/ml x 200ul

Catalog#	Product Name	Amounts
Fluorescent Reporter Lentivirus driven by EF1a promoter:		
<u>LVP310</u>	GFP (EF1a, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP310-PBS</u>	GFP (EF1a, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP425</u>	GFP (EF1a, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP425-PBS</u>	GFP (EF1a, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP426</u>	GFP (EF1a, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP426-PBS</u>	GFP (EF1a, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1333</u>	GFP (EF1a, Zeo) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1333-PBS</u>	GFP (EF1a,, Zeo) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP427</u>	RFP (EF1a, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP427-PBS</u>	RFP (EF1a, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP428</u>	RFP (EF1a, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP428-PBS</u>	RFP (EF1a, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP429</u>	RFP (EF1a, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP429-PBS</u>	RFP (EF1a, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP430</u>	CFP (EF1a, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP430-PBS</u>	CFP (EF1a, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul



<u>LVP431</u>	CFP (EF1a, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP431-PBS</u>	CFP (EF1a, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP432</u>	CFP (EF1a, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP432-PBS</u>	CFP (EF1a, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP468</u>	CFP (EF1a, RFP- Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP468-PBS</u>	CFP (EF1a, RFP- Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP465</u>	YFP (EF1a, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP465-PBS</u>	YFP (EF1a, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP466</u>	YFP (EF1a, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP466-PBS</u>	YFP (EF1a, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP467</u>	YFP (EF1a, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP467-PBS</u>	YFP (EF1a, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP364</u>	BFP (EF1a, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP364-PBS</u>	BFP (EF1a, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP365</u>	BFP (EF1a, Bsd) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP365-PBS</u>	BFP (EF1a, Bsd) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP366</u>	BFP (EF1a, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP366-PBS</u>	BFP (EF1a, Neo) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1225</u>	RFP (EF1a, Zeo) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1225-PBS</u>	RFP (EF1a, Zeo) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1227</u>	RFP (EF1a, Hygro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul



<u>LVP1227-PBS</u>	RFP (EF1a, Hygro) Lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP1335</u>	GFP (EF1a, No antibiotics) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1335-PBS</u>	GFP (EF1a, No antibiotics) Lentivirus, Concentrated	1x10 ⁸ IFU/ml x 200ul
<u>LVP1337</u>	RFP (EF1a, No antibiotics) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1337-PBS</u>	RFP (EF1a, No antibiotics) Lentivirus, Concentrated	1x10 ⁸ IFU/ml x 200ul

Catalog#	Product Name	Amounts
Fluorescent Reporter Lentivirus driven by other promoters:		
<u>LVP579</u>	GFP (CAG, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP579-PBS</u>	GFP (CAG, Puro) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP580</u>	GFP (CAG, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP580-PBS</u>	GFP (CAG, Bsd) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP581</u>	GFP (CAG, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP581-PBS</u>	GFP (CAG, Neo) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP582</u>	RFP (CAG, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP582-PBS</u>	RFP (CAG, Puro) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP583</u>	RFP (CAG, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP583-PBS</u>	RFP (CAG, Bsd) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP584</u>	RFP (CAG, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP584-PBS</u>	RFP (CAG, Neo) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP585</u>	CFP (CAG, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP585-PBS</u>	CFP (CAG, Puro) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul



<u>LVP586</u>	CFP (CAG, Bsd) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP586-PBS</u>	CFP (CAG, Bsd) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP587</u>	CFP (CAG, Neo) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP587-PBS</u>	CFP (CAG, Neo) lentiviral particles in PBS	5x10 ⁷ IFU/ml x 200ul
<u>LVP298</u>	RFP (mPGK, Puro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP298-PBS</u>	RFP (mPGK, Puro) Lentiviral particles	1x10 ⁸ IFU/ml x 200ul
<u>LVP355</u>	RFP (Ubc, Puro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP355-PBS</u>	RFP (Ubc, Puro) Lentiviral particles	1x10 ⁸ IFU/ml x 200ul
<u>LVP1228</u>	GFP (mPGK, Puro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1228-PBS</u>	GFP (mPGK, Puro) Lentiviral particles	1x10 ⁸ IFU/ml x 200ul
<u>LVP1229</u>	GFP (Ubc, Puro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1229-PBS</u>	GFP (Ubc, Puro) Lentiviral particles	1x10 ⁸ IFU/ml x 200ul
<u>LVP1230</u>	GFP (ActB, Puro) Lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP1230-PBS</u>	GFP (ActB, Puro) Lentiviral particles	1x10 ⁸ IFU/ml x 200ul

Catalog#	Product Name	Amounts
Fluorescent proteins expressed <u>under the optional inducible TetCMV promoter</u>:		
<u>LVP800</u>	GFP (TetCMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP800-PBS</u>	GFP (TetCMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP801</u>	RFP (TetCMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP801-PBS</u>	RFP (TetCMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul
<u>LVP802</u>	CFP (TetCMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
<u>LVP802-PBS</u>	CFP (TetCMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul



LVP803	BFP (TetCMV, Puro) lentiviral particles	1x10 ⁷ IFU/ml x 200ul
LVP803-PBS	BFP (TetCMV, Puro) lentiviral particles in PBS	1x10 ⁸ IFU/ml x 200ul

Catalog#	Product Name	Amounts
Dual Fluorescent Signal Lentivirus:		
LVP024	GFP (RFP - Bsd) Lentivirus	1x10 ⁷ IFU/ml x 200ul
LVP024-PBS	GFP (RFP - Bsd) Lentivirus in PBS	5x10 ⁷ IFU/ml x 200ul
LVP357	YFP (RFP - Bsd) Lentivirus	1x10 ⁷ IFU/ml x 200ul
LVP357-PBS	YFP (RFP - Bsd) Lentivirus in PBS	5x10 ⁷ IFU/ml x 200ul
LVP531	RFP (GFP - Puro) Lentivirus	1x10 ⁷ IFU/ml x 200ul
LVP531-PBS	RFP (GFP - Puro) Lentivirus in PBS	5x10 ⁷ IFU/ml x 200ul

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. GenTarget’s lentivector system is Human Immunodeficiency Virus-1 (HIV) based plasmids for gene expression and knockdown. The lentivectors are used to generate lentiviral particles (lentivirus) that can be transduced into almost all kinds of mammalian cells, including stem cells, primary cells, and non-dividing cells both *in vivo* and *in vitro*. Lentiviral Particles stably integrate into the transduced cells’ genome for long term expression, making it a great gene transfer agent.
- Fluorescent proteins** of different colors are probes to study protein structure and function, act as biosensors to track all kinds of biological function or activities. They are expressed in living cells, enabling a whole new technology of visible *in vivo* genetic sensors. These proteins have allowed us to visualize, in real time, important aspects of cancer in living animals, including tumor cell mobility, invasion, metastasis, and angiogenesis, provide the basis for the new field of *in vivo* cell biology.

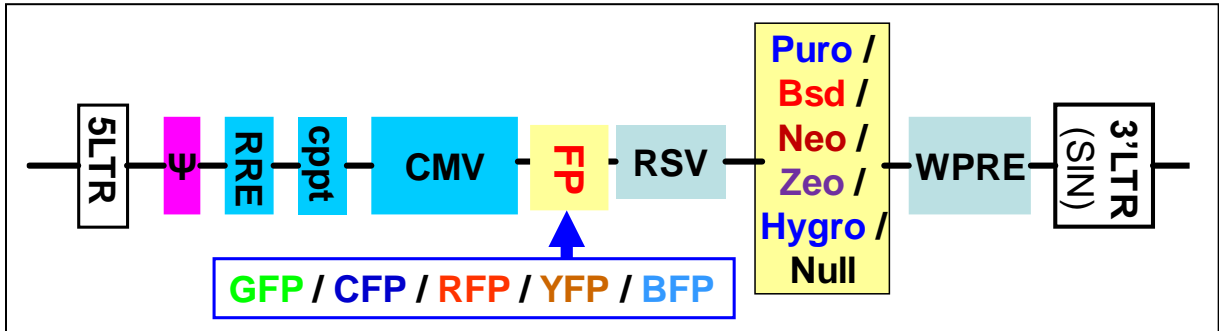


GenTarget provides the most comprehensive expression lentivirus products for all kinds of fluorescent proteins. Each fluorescent protein is codon-optimized to demonstrate the strongest possible fluorescence signal, and is available expressed under different promoters, with different selection markers, to satisfy different needs. Those products are best tools for living imaging, promoter and pathway research, and biosensors for specific research applications.

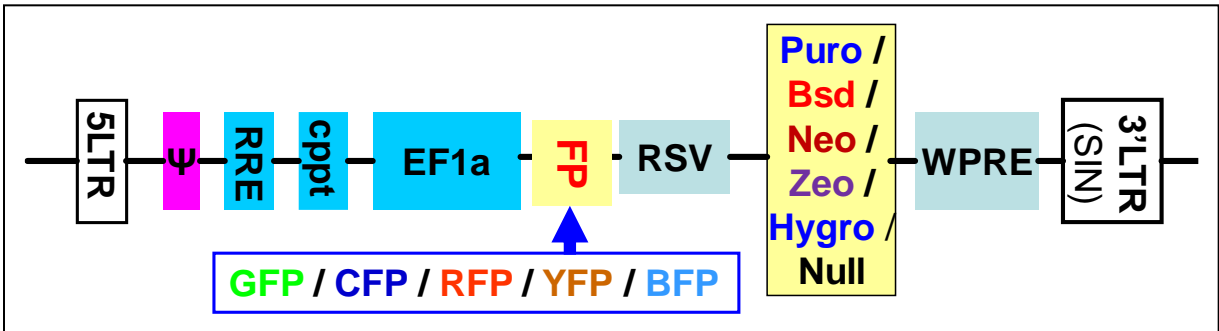
3. **Promoters:** The following promoters were used to drive the expression of fluorescent proteins of different colors:
 - 1) The proprietary [*suCMV promoter*](#) for the highest expression level in the most of cell types;
 - 2) The **engineered EF1a promoter** is non-tissue specific, highly expressed in all cell types, and less likely to be silenced after long-term culture.
 - 3) The **CAG promoter**: a hybrid of the CMV enhancer and the chicken beta-actin promoter, for the highest expression level in embryonic stem cells.
 - 4) The [*optional inducible CMV promoter \(TetCMV\)*](#): can be used for either constitutive high expression or tetracycline-inducible expression.
 - 5) The **mPGK** promoter: this promoter contains five copies of the hexadeoxynucleotide, GGGCGG, a CCAAT sequence, but no TATA box. It can efficiently drive the expression of reporter or genes, and may preferably in some cell types.
 - 6) The **Ubc** Promoter: the promoter of the Ubc gene contains putative heat shock elements (HSEs), which mediates UBC induction upon stress. It can stably drive a gene expression in hESCs.
 - 7) Actin beta (**ActB**) promoter: the beta actin promoter confers constitutive expression in a variety of different cell backgrounds, including differentiated muscle. Normal promoter activity is dependent upon the binding of a ubiquitous factor to the CCAAT-box element. ACTB (Actin Beta) is a ubiquitous globular protein that is one of the most highly-conserved proteins known.
4. **Selection markers:** Each lentivirus contains an either antibiotic marker [Puromycin (**Puro**), Neomycin (**Neo**), Blastidicin (**Bsd**), Zeocin (**Zeo**), or Hygromycin (**Hygro**)] or “**fluorescent-antibiotic**” fusion dual marker, driven by a constitutive RSV promoter.
5. **Lentivector schemes:** the following schemes represents the expression lentivirus’s core structure.



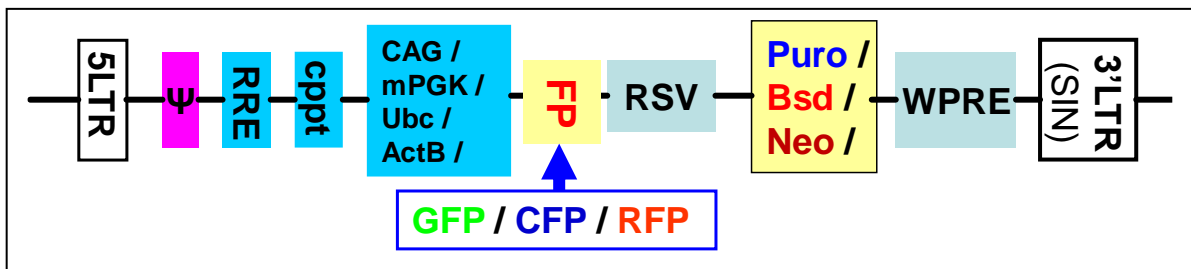
1) Fluorescent Reporter Lentivirus driven by **CMV** promoter:



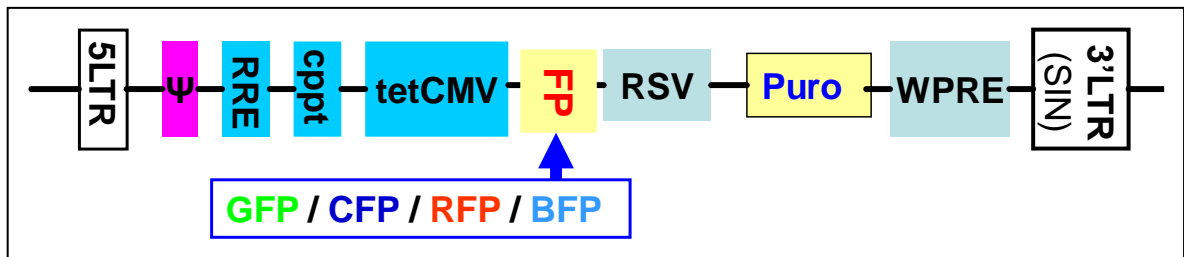
2) Fluorescent Reporter Lentivirus driven by **EF1a** promoter:



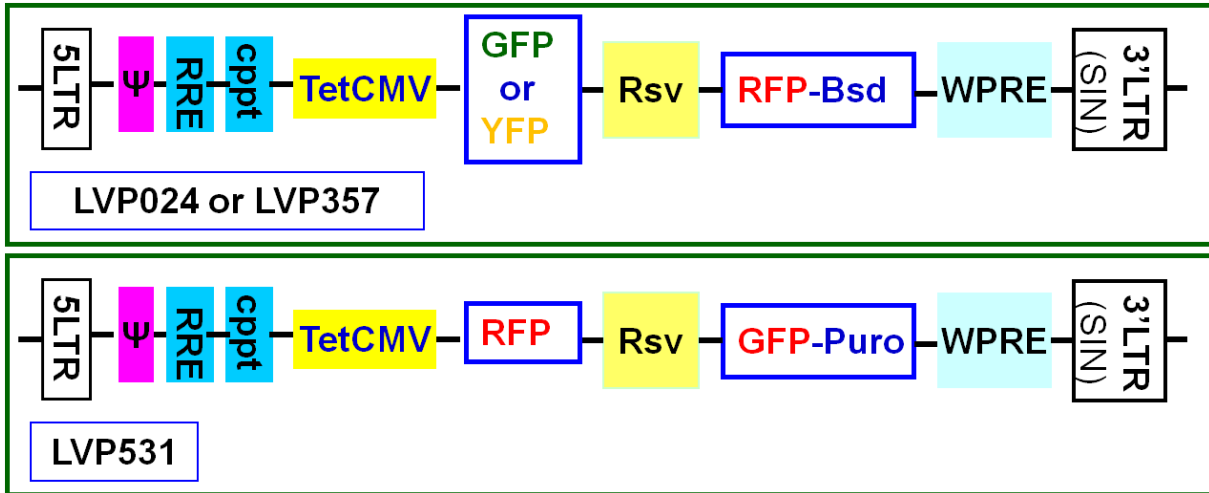
3) Fluorescent Reporter Lentivirus driven by **other promoters**:



4) Fluorescent proteins expressed under the optional inducible **TetCMV** promoter:



5) **Dual Fluorescent** Signal Lentivirus:



6. Product format:

Expression lentivectors were co-transfected with GenTarget's proprietary packaging mix (Cat# [HT-pack](#)) into 293T cells (cat# [TLV-C](#)). The pre-made lentiviral particles are VSV-G pseudotyped viruses. Each lot of virus is validated and quality is guaranteed.

Particles are provided in two formats:

- Regular particles in DMEM medium with 10% FBS and 60 µg/ml polybrene (10 x stock)
- Particles concentrated and buffer exchanged into PBS for *in vivo* use

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>).

How to select the product:

- 1) Select the fluorescent protein color, single color or dual color;
- 2) Select the promoter that drive fluorescent protein based upon the promoter strength in your assay cell types.
- 3) Select the antibiotic marker, or "fluorescent-antibiotic" fusion dual marker;
- 4) Select the regular lentivirus or concentrated lentivirus in PBS; (note: the virus in PBS is best suitable for in vivo application or for the transduction-difficult cell types;

Transduction Protocols:

1) Transduction Protocol for Adhesive cells :



Note: Pre-made lentivirus is provided ready to use, so it can be simply added into your cell culture; the amount of virus to add depends on cell type. For quick transduction, add 50 μ l of virus into each well of 24-well-plate where cell density is 50% to 75%. After 72 hours (no need to change medium), visualize positive transduction rate by fluorescence microscopy. For stable cell line generation, pass cells into medium containing antibiotic or perform fluorescence cell sorting followed by antibiotic selection.

Day 0:

Seed cells in complete medium at the appropriate density and incubate overnight.

Note: at the time of transduction, cells should be 50%-75% confluent. For example, seed HeLa cells at 0.5×10^5 /ml x 0.5ml in a well of a 24-well plate.

Day 1:

- Remove the culture medium and add 0.5ml fresh, warm, complete medium.
- Thaw the pre-made lentiviral stock at room temperature and add the appropriate amount of virus stock to obtain the desired MOI.
- Return cells to 37°C, CO₂ incubator.

Note: Try to avoid freezing and thawing. If you do not use all of the virus at one time, you may re-freeze the virus at -80 °C for future use; virus titer will decrease by ~10% for each freeze/thaw cycle.

Day 3:

At ~72hr after transduction, check the transduction rate by fluorescence microscopy or calculate the exact transduction rate by flow cytometer (FACS or Guava).

Day 3 + (optional):

Sort transduced cells by FACS, and select for antibiotic resistance.

2) Transduction Protocol for Suspension Cells:

Grow cells in complete suspension culture medium; Measure cell density. When density has reached $\sim 3 \times 10^6$ cells/ml, measured viability should be > 90%. Dilute cells into 1×10^6 cell/ml in complete medium.

Day 1:

- Thaw lentiviral particles at room temperature.
- Add premade lentiviral particles into the diluted cells at a ratio of: 50 to **100 μ l** virus per 0.5 ml of cells (Note: depending on cell type, you may need to use more or less virus).



- Grow cells in a shaking flask in a CO2 incubator.

Day 2:

At 24 hours after transduction, add an equal amount of fresh medium containing relevant antibiotics. **Note:** amount of antibiotic depends on cell type. Continue growing cells in CO2 incubator.

Day 3:

At 72 hours after transduction, check fluorescence with a fluorescence microscope or calculate the transduction efficiency using a cell sorter such as FACS or Guava. Sort for fluorescence positive cells and maintain antibiotic selection to generate a stable cell line.

Transduction Example A:

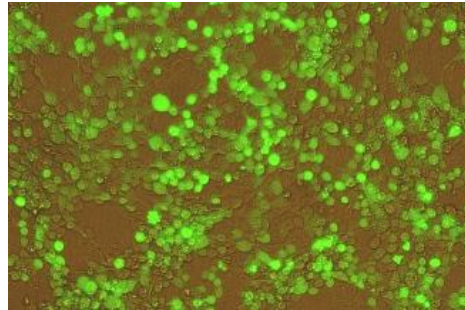
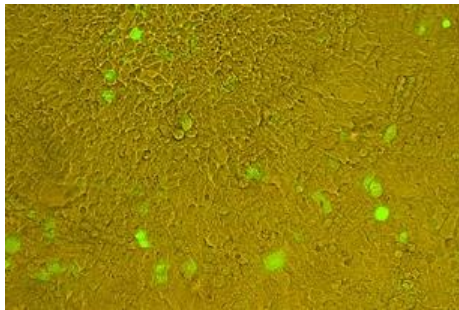


Figure 1: GFP Expression in HeLa cells. HeLa cells were transduced with 5ul (Right image) or 50ul (Left image) of Pre-made GFP lentivirus (#LVP001) in 24-well plate (see protocol above). GFP signal was visualized at 72 hours after transduction.

Transduction Example B:

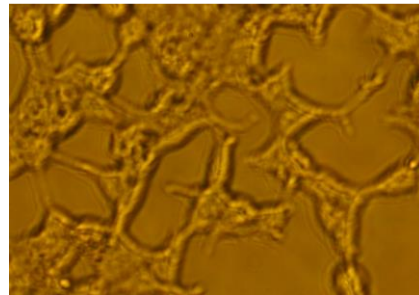
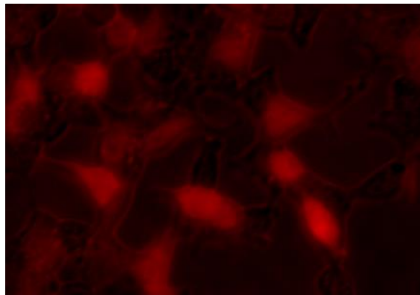


Figure 2: RFP Expression in A549 cells. A549 cells were transduced with 50ul Pre-made RFP lentivirus (Cat#: LVP023-SF) in 24-well plate. RFP signal was visualized at 72 hours after transduction. Images were taken under microscope, the left image under RFP filter, the right image under bright light.



Transduction Example C:

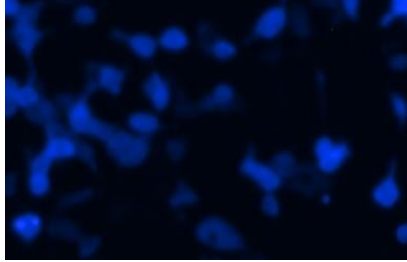


Figure 3: CFP Expression in HEK293 cells: Quick transduction protocol: add 50ul CFP lentivirus (Cat#: LVP430) into one well in 24-well-plate where cell density is at 50% ~ 75%. Image taken at ~72 hours after virus added (no medium changed). **Result:** The positive transduced cells are >90%.

Note: Filter wavelength settings:

BFP filter:	Ex380 ~400	~Em 440 ~460;
CFP filter:	~Ex436	~Em480;
GFP filter:	~Ex450-490	~Em525;
YFP filter:	~Ex500	~Em535;
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 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.

Related Products: GenTarget's Pre-made lentivirus Products:

Product Category	Product Description (please click category name to see product's pages)
Pathway Reporter	Lentivirus for all kinds of pathway assays
Cell Immortalization	Lentivirus for cell immortalization: Large T-antigen, hTERT, EBNA1/EBNA2, HpV16-E6/E7, Adenovial E1A, Kras_G12V, HOXA9, et al.
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
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 with different antibiotic selection markers.
Fluorescent Markers	Lentivirus express all commonly used fluorescent proteins: GFP, RFP, CFP, BFP YFP, niRFP, unstable GFP and others.
CRE recombinase	Premade lentivirus for expressing nuclear permeant CRE recombinase with different flurescent and antibiotic markers.
SEAP Reporter	lentivirus expressing SEAP under different promoters (TetCMV, EF1a, CAG, Ubc, mPGK, Actin-beta or a signal pathway responsive promoter),
LoxP ColorSwitch	Premade lentivirus expressing "LoxP-GFP-Stop-LoxP-RFP" cassette, used to monitor the CRE recombination event in vivo.
CRISPR /hu CAS9	Preamde lentivirus express humanized wild-type Cas9 endonuclease for genomic editing with CRISPR
TetR Repressor	Premade lentivirus expressin TetR (tetracycline regulator) protein, the repressor protein for the inducible expression system.
iPS factors	Premde lentivirus for human and mouse iPS (Myc, NANOG, OCT4, SOX2, FLF4) factors with different



	fluorescent and antibiotic markers
Cell Organelle imaging	Premade lentivirus for cell organelle imaging. The fluorescent marker GFP/RFP/CFP was sub-cellular localized in different cell organelle for living cell imaging.
LacZ expression	Express different full length β-galactosidase (lacZ) with different selection markers
Anti-miRNA lentivirus	Pre-made lentivirus expression a specific anti-miRNA cassette.
Fluorescent-ORF fusion	Pre-made lentivirus expression a " GFP/RFP/CFP-ORF " fusion target.
Pre-made shRNA lentivirus	Premade shRNA lentivirus for knockdown a specific genes (P53, LacZ, Luciferase and more).
microRNA and anti-microRNA lentivirus	Premade lentivirus expression human or mouse precursor miRNA . And anti-miRNA lentivector and virus for human and mouse miRNA.
Negative control lentiviruses	Premade negative control lentivirus with different markers : serves as the negative control of lentivirus 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.
Immuno Therapy	New products