

## Ready-to-use Lentiviral Particles for intracellular labeling

(LocLight™ Living cell imaging lentivirus for sub-cellular localization)

LocLight™ cell organelle labeling lentivirus are provided as 200ul/per vial with different fluorescent markers, at titer of  $1 \times 10^{7-8}$  IFU/mL. Titers may vary lot-to-lot. Please refer to the titer stated on the pack size description in our website. Please see the following table for each product information.

LocLight Particles Name	Targeted Sub-cellular Organelle	Product Catalog #		
		GFP	RFP	CFP
Nuc-GFP, Nuc-RFP, Nuc-CFP,	Fluorescent signal only showed in <b>nucleus area</b> targeted by an improved <b>NLS</b> (Nuclear localization sequence) signal.	LVP360-G	LVP360-R	LVP360-C
Cyto-GFP, Cyto-RFP, Cyto-CFP,	Fluorescent signal only showed in <b>Cytoplasm area</b> targeted by an <b>engineered nuclear export</b> signal.	LVP450-G	LVP450-R	LVP450-C
ER-GFP, ER-RFP, ER-CFP,	Fluorescent signal targeted in <b>Endoplasmic Reticulum (ER)</b> by our engineered combination of the <b>KDEL</b> (ER retention signal) and E2 protein C-term 29 amino acid.	NTD	NTD	NTD
Golgi-GFP, Golgi-RFP, Golgi-CFP,	Fluorescent signal targeted in <b>Golgi</b> by the <b>Golgi retention signal</b> from 1, 4-galactosyltransferase (GT).	LVP451-G	LVP451-R	LVP451-C
Mito-GFP, Mito-RFP, Mito-CFP,	Fluorescent signal targeted in <b>Mitochondria</b> by the Leader sequence of E1 alpha pyruvate dehydrogenase.	LVP452-G	LVP452-R	LVP452-C
Nuc-membrane-GFP, Nuc-membrane-RFP, Nuc-membrane-CFP,	Fluorescent signal targeted in <b>Nuclear Membrane</b> by the inner nuclear membrane localization signal from lamin B membrane receptor.	LVP453-G	LVP453-R	LVP453-C

Peroxisome-GFP, Peroxisome-RFP, Peroxisome-CFP,	Fluorescent signal targeted in <b>Peroxisome</b> by the Peroxisomal C-terminal SKL targeting sequence.	LVP454-G	LVP454-R	LVP454-C
Plasma-mem-GFP, Plasma-mem-RFP, Plasma-mem-CFP,	Fluorescent signal targeted in <b>Plasma membrane</b> by ADP-ribosylation factor 6, a plasma membrane protein.	LVP455-G	LVP455-R	LVP455-C
Microtubule-GFP, Microtubule-RFP, Microtubule-CFP,	Fluorescent signal targeted in <b>Microtubule</b> by microtubule-associated protein 4 (MAP4).	LVP456-G	LVP456-R	LVP456-C
GFP-H2B, RFP-H2B, CFP-H2B,	Fluorescent signal targeted in <b>mitotic chromosomes and interphase chromatin</b> by Histone 2B protein (H2B).	LVP444-G	LVP444-R	LVP444-C
Lysosomes-GFP, Lysosomes-RFP, Lysosomes-CFP,	Fluorescent signal targeted in <b>Lysosomes</b> by lysosomal associated membrane protein 1 (LAMP1).	LVP457-G	LVP457-R	LVP457-C
Endosomes-GFP, Endosomes-RFP, Endosomes-CFP,	Fluorescent signal targeted in <b>Endosomes</b> by RAB5A that localized to early endosomes for endocytosis and endocytic-sorting pathways.	LVP458-G	LVP458-R	LVP458-C
LocLight Null Control particles	It contains a non-sense sequence that can be packaged as <b>negative control particles</b> , but does not express any proteins, used for lentivirus treatment background control.	LVP-LoCLight-Null		

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

### Product Description:

Lentivirus is the easiest and most effective method to deliver genes into a majority of mammalian cell types, including non-dividing and primary cells. The delivered genes will be integrated into host cell genome for long-term expression.

Utilizing a proprietary lentiviral vector system, the high quality LocLight™ cell organelle labeling lentiviruses have been generated with different fluorescent markers. Each LocLight™ lentivirus contains a well-defined cell organelle targeting signal fused with a Fluorescent protein (GFP, RFP or CFP), expressed under our proprietary suCMV promoter. The fluorescent proteins are non-toxic to cells, do not compromise cell structure or interfere with signal pathway evolution. Therefore they are great tools for live-cell imaging and for dynamically investigation of sub-cellular signal pathways. They also can be used in fixed cell analyses after cell fixation.

The pre-made LocLight™ lentiviruses do not need any extra additives or substrates for usage. They are extremely easy-to-use. By simply adding the lentivirus into mammalian cell culture, the expression of auto-fluorescent protein will be localized to the specific sub-cellular compartments in 1 to 3 days post-transduction, which can be visualized under microscope with corresponding filter sets.

#### Key features:

1. **High titer and robust:** Those premade lentiviral particles are the best in their class, demonstrating a bright fluorescent signal, strong transduction efficiency. Each virus was validated in lot by lot basis and its quality is guaranteed.
2. Deliver fluorescent labeled targets into hard to transfect cells (like primary cells or neuron cells) for **permanent** and **long term expression**;
3. **Very easy to us:** Particles are provided in DMEM medium with 10% FBS and 60ug/ml polybrene as ready for immediate use status. Simply add into your cell culture and visualize the fluorescent at 48-72 hours. There is no need for any plasmids, sub-cloning works, transfection reagents, any additives or, substrates to add, cell washes, or medium changes;
4. Different fluorescent labeled particles for **multi-color application** when multiple different particles used in the same cells;

For general questions about our ready-to-use lentiviral particles, please consult in our website:

<http://www.amsbio.com/FAQ-Premade-Lentiviral-particles.pdf>

If you want to express or label your specific target, we also provide **lentiviral services** for cloning your gene of interest and generate ready-to-use viral particles with the best prices and fastest turnaround time. Please see **our website** for details: <http://www.amsbio.com/custom-lentivirus-service-expression-lentiviral.aspx>

Transduction Protocols:

**Note:** A quick transduction protocol is add 50ul virus into one well in 24-well-plate where cell density is at 50% ~ 75%. At 72 hours after virus addition (no need to change medium), visualize the positive rate under fluorescent microscope. The positive transduced cells can be sorted via fluorescent signal.

**Day 0:** Seed the desired cells in complete medium at appropriate density and incubate overnight. (Note: at the time of transduction, cells confluence should be at 50% ~75%) For example, plate HEK 293 cells at  $0.5 \times 10^5$ /ml x 0.5ml in a well of a 24-well plate;

**Day 1:** Thaw the Pre-made lentiviral stock at room temperature. Add appropriate amount of virus stock to obtain the desired MOI. Return cells to 37°C/CO<sub>2</sub> incubator.

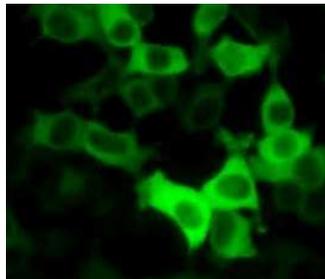
**Day 3:** At the time of 24hr~72hr post transduction, check the fluorescence signal with a suitable filter under fluorescent Microscope.

Transduced cells can be sorted out by FACS, prepared for further in vivo application.

**Note:** Leftover particles can be frozen down for future uses. But try to avoid freeze/thaw cycles by making aliquots.

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**Quick transduction example:**



25ul of LVP450-G was added in HEK293 cells (in one well at 24-well plate). Image was taken at 48 hours after virus addition. The GFP signal only showed up in cytoplasm area as expected.

**Note: Filter wavelength settings**

<b>GFP filter:</b> ~Ex450-490	~Em525
<b>RFP filter:</b> ~Ex545	~Em620
<b>CFP filter:</b> ~Ex436	~Em480

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**Related Products:**

<b>Product Category</b>	<b>Product Description</b>
<b>Fluorescent fusion</b>	Premade lentivirus for expressing a specific target fused with a <b>fluorescent protein (GFP, RFP, YFP or CFP)</b>
<b>Nuclear permeable CRE</b>	Premade lentivirus for expressing nuclear permeable <b>CRE recombinase</b> with different fluorescent and different antibiotic selection markers
<b>Luciferase expression</b>	Premade lentivirus for <b>Firefly</b> -luciferase II, <b>Renilla</b> -luciferase, <b>Gaussia</b> -luciferase and <b>Cypridina</b> -luciferase with different fluorescent and antibiotic markers
<b>iPS factors</b>	Premade lentivirus for human and mouse iPS factors ( <b>Myc, NANOG, OCT4, SOX2, KLF4, LIN28</b> ) with different fluorescent and antibiotic markers
<b>Human and mouse ORFs</b>	Premade lentivirus for <b>hundreds of human and mouse ORFs</b> with RFP-Blasticidin fusion dual markers
<b>shRNA lentivirus</b>	Premade shRNA lentivirus to knockdown specific genes ( <b>P53, LacZ, Luciferase</b> and more). Consult our custom service page to have your own shRNA lentivirus made: <a href="http://www.amsbio.com/custom-lentivirus-service-inducible-shRNA-lentivirus.aspx">http://www.amsbio.com/custom-lentivirus-service-inducible-shRNA-lentivirus.aspx</a>
<b>Negative controls</b>	Premade <b>negative control lentivirus with different markers</b> . They serves as negative control for lentivirus use, for validation of the specificity of any lentivirus target expression effects

**Safety Precaution:**

Those 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. Ware glove all the time at 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 : [http://oba.od.nih.gov/rdna\\_rac/rac\\_guidance\\_lentivirus.html](http://oba.od.nih.gov/rdna_rac/rac_guidance_lentivirus.html)

**Warranty:**

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

**For general information about our  
ready-to-use or custom made lentiviral particles, please consult:**

<http://www.amsbio.com/Lentivirus.aspx>

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