GenTarget Inc

7930 Arjons Drive, Suite B
San Diego, CA 92126, USA
Phone: 1 (858) 265-6446
Email: orders@gentarget.com
Fax: 1 (800) 380-4198

DNA Transfection Reagent Product Manual

Catalog Number	Amount	Storage
LP4k	1.0 ml / (1 vial)	Store at 4oC (do not freeze)

Product Description:

Effectively deliver plasmid DNA into cultured cells is most important step for over-expression, knockdown or lentivirus production. The most common used delivery method is to use Transfection Reagents.

There are different types of transfection reagents, such as cationic polymer, small molecule (like PEG, DEAE), calcium phosphate solution, and lipids. For best delivery large size plasmid with wide accommodation to DNA amounts, Gentarget provides a lipid based transfertion reagent. It is developed with the best formulation for high transfection efficiency in most human, mouse or insert cell types. It has been used to produce thousand of lentivirus products, demonstrating a superior performance for virus production.

Key Features:

1. Best for the transfection of large plasmid or multiple plasmid mixture;
2. No need for DNA/Lipid ratio optimization, simply use 1.5 ul of LP4k reagent per 500 ng of DNA in serum-free culture, or 2.0 ul of LP4K per 500 ng of DNA in serum culture;
3. High transfection efficiency in most cell types, both adherent and suspension cells;
4. High transfection efficiency in both serum-containing and serum-free media;
5. Consistent performance with highly reproducibility

Transfection Protocol:

1. See cells to obtain about 70-90% confluent at time for transfection;
2. Dilute DNA and LP4K reagent:

   Note: The following set up is for one well in 24-well plate. Depends on transfection scale, you can scale up proportionally as needed.

   1) add total 500 ng of plasmids into 50 ul of serum-free medium;
   2) add 2.0 ul (or 1.5 ul, for serum-free cell culture) of LP4K reagent into 50 ul of serum-free medium;
      (note: you can use Opti-Mem medium or your cell culture medium without serum for both dilution);

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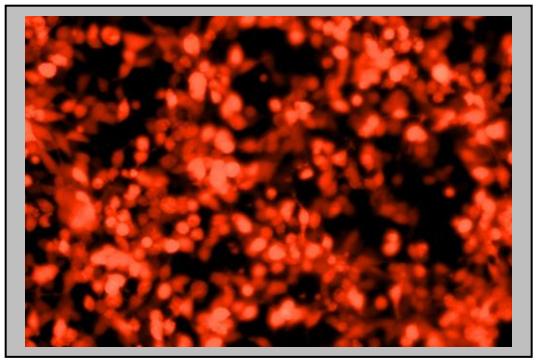
3) Add diluted LP4K reagent into diluted DNA, incubate at room temperture for 10 min;

3. Transfer the DNA-LP4k complex to cells: add the mixture above (~100ul) to your cell culture, into one well in 24-well plate (with serum or serum-free cell culture). Then, place the cell culture back to incubator, continue to culture at desired conditions.
4. Analyze or check the transfection efficiency at 1 to 3 days depends on cell types. (Note: no need to change or add medium during transfection process.)

Quality Control:

Each lot transfection reagent was tested in HEK293 cells and only the products with high transfection efficiency are provided to customers.

Sample transfection photos:



The 14.3 kb expression lentivector (CAT#: LVP390) and three packaging plasmids were transfected into HEK293-T cell (0.5 ug DNA / 2 ul of LP4K).

Image was taken at 12 hour post transfection

Warranty and user terms

- This product is warranted to perform as described when used in accordance with this manual. GenTarget, Inc. MAKES NO REPRESENTATIONS AND EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED. GenTarget's sole remedy for breach of warranty should be, at the option of GenTarget, to repair or replace the product if this product does not meet the stated quality standard.
- This product is provided for research use only. GenTarget is not liable, and does not have any responsibility or liability, whatsoever for any direct and indirect, consequential, or other damages resulting from using this Product.

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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;
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,

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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.
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.

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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
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.