GenTarget Inc

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

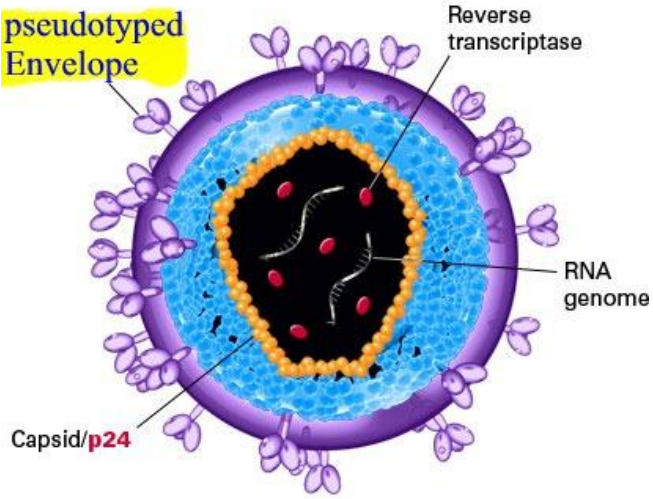
Virus Like Particles for Different Viral Antigens (Envelope proteins)

Catalog#	Product Name	Amounts
VLP003	COVID-19 S (6His) VLP	**200ul** ($1x10^8$ VP/ml)
VLP004	HBsAg-6His Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP005	Zika Envelope-(6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP006	Rubella Envelope-(6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP007	Dengue Envelope Protein (6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP008	YFV Envelope-(6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP009	Ebolavirus Glycoprotein-(6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP010	HHV-5 Envelope B-(6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP011	WNV Envelope-(6His) Viral Like Particles	**200ul** ($1x10^8$ VP/ml)
VLP012	COVID-19 S Protein Mutant (L452R)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP013	COVID-19 S Protein Mutant (K417T, E484K, N501Y)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP014	COVID-19 S Protein Mutant (W152C, L452R, D614G)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP015	COVID-19 S Protein Mutant (S477N)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP016	COVID-19 S Protein Mutant (L452R, D614G)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP017	COVID-19 S Protein Mutant (K417N, E484K, N501Y)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP018	COVID-19 S Protein Delta (L452R, T478K)-6His VLP	**200ul** ($1x10^8$ VP/ml)
VLP019	HBsAg-Avidin Viral Like Particles	**200ul** ($1x10^8$ VP/ml)

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

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

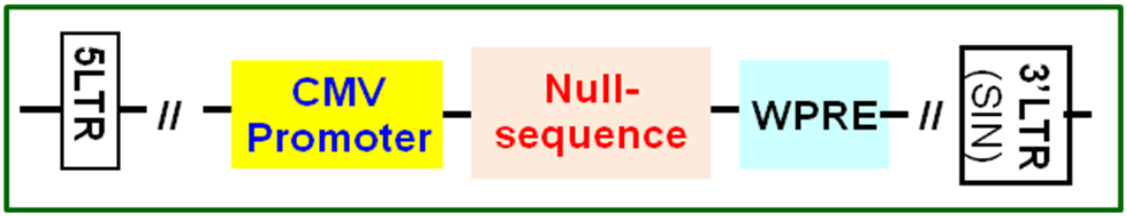
What is Virus-Like Particles (VLP)?



A viral envelope is the outermost layer of the virus, consist of the glycoproteins. It serves to bind the receptor on the host's cell membrane. When desired, the virus can be enveloped with a desired protein (so called pseudo-typing). The glycoproteins that able to maintain a viral particle structure, can be used for packaging VLP (pseudotyped viral particles).

Gentarget's Lentivirus-Like Particles (VLP):

Gentarget developed the virus-like particle product line with different pseudo-typed envelope protein. They are pseudo-typed with a desired envelope protein **tagged by C-terminal 6His (or Avidin)**. They are packaged with a Null genomic material as virion core (see the lentivector core structure scheme below).



Each VLP is pseudo-typed with an desired envelope protein. The VLPs are non-replicative, non-pathogenic and non-infectious to mammalian cells, or only transducer to the specific cell types that containing the corresponding receptor to the pseudo-typed envelope protein.

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

VLPs are provided in 200ul PBS solution at the concentrated titer of 1x10^8 VP/ml. The density of envelope protein should much high that the particle titer because each particle contains many copies of the assembled envelope protein.

Why use VLP?

1) **Effective presentation of the desired envelope antigen at high density on the particle surface:**

   The pseudotyped VLPs mimic each envelope protein surface exposure, present the envelope protein on the VLP's surface in high density, and easier access to immune response or bind to the corresponding antibodies. They are highly immunogenic and more effectively activate the immune response. Therefore, the most effective antibodies can be raised from the VLP.

   The VLPs can be used to study the structural properties of each envelope protein, and can be used for antibody development and validation, or can be used in platform for high through-put research in vaccine research, development and validation.

2) **Easy to use:**
   Those VLPs are premade, ready to use. No need antigen purification or sample preparation. You simply coat the VLP as antigen, onto wells in ELISA plate, for its antibody / vaccine detection or validation. They can response to or be detected by the envelope specific antibody and by anti-C-term 6His antibody.

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.

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.

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.

GenTarget Inc

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

Product Category	Product Description (please click into each category's page)
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.
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.

GenTarget Inc

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

Product Category	Product Description (please click into each category's page)
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
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.