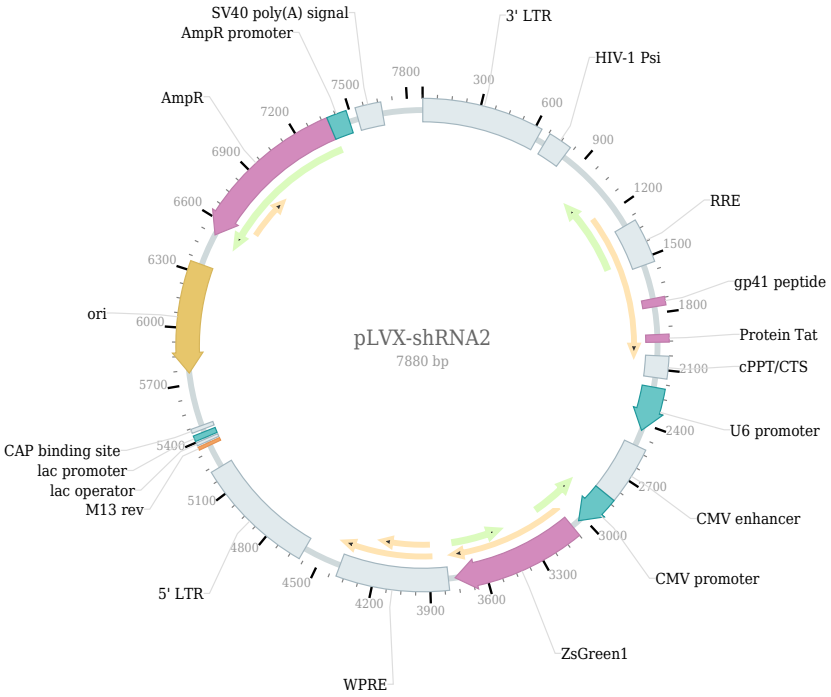
pLVX-shRNA2

Vector ID	V012715
Antibiotic Resistance	Ampicillin
Length	7880 bp
Vector Type	Viral Expression & Packaging Vectors

Product Information

Replication Origin	ori
Source/Author	Clontech
Selection Marker	ZsGreen1
Copy Number	High copy number
Promoter	U6
Cloning Method	Enzyme Cut
Comment	pLVX-shRNA2 is an HIV-1-based, lentiviral expression vector designed to express a small hairpin RNA (shRNA) for RNA interference (RNAi) studies. Expression of your shRNA is driven by the RNA Pol III-dependent, human U6 promoter (PU6), located just upstream of the MCS. pLVX-shRNA2 can be used as a plasmid expression vector and transfected into cells, or it can be packaged into viral particles and transduced into cells. Lentiviral particles derived from the vector allow the expression of shRNAs in virtually any cell type, including primary cells. In addition to expressing shRNAs, pLVX-shRNA2 also expresses the fluorescent protein ZsGreen1, a human codon-optimized variant of the reef coral Zoanthus sp. green fluorescent protein, ZsGreen (1). Expression of ZsGreen1 is driven by the constitutively active human cytomegalovirus immediate early promoter (PCMV IE), allowing it to be used as an indicator of transfection or transduction efficiency, as well as a marker for cell sorting. pLVX-shRNA2 contains all of the viral processing elements necessary for the production of replication-incompetent lentivirus, as well as elements to improve viral titer and overall vector function. The woodchuck hepatitis virus posttranscriptional regulatory element (WPRE) promotes RNA processing events and enhances nuclear export of viral RNA (2), leading to increased viral titers from packaging cells. In addition, the vector includes a Rev-response element (RRE), which further increases viral titers by enhancing the transport of unspliced viral RNA out of the nucleus (3). Finally, pLVX-shRNA2 also contains a central polypurine tract/central termination sequence element (cPPT/CTS). During target cell infection, this element creates a central DNA flap that increases nuclear import of the viral genome, resulting in improved vector integration and more efficient transduction (4). The vector also contains a pUC origin of replication and an E. coli ampicillin resistance gene (Ampr) for propagation and selection in bacteria.

Vector Map



Plasmid Resuspension Protocol

1. Centrifuge at 5,000×g for 5 min.
2. Carefully open the tube and add sterile water to dissolve the DNA: add 20 µl for 5 µg plasmid, and 100 µl for 100 µg plasmid.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin to concentrate the liquid at the bottom. Speed is less than 5000×g.
5. Store the plasmid at -20 ℃.