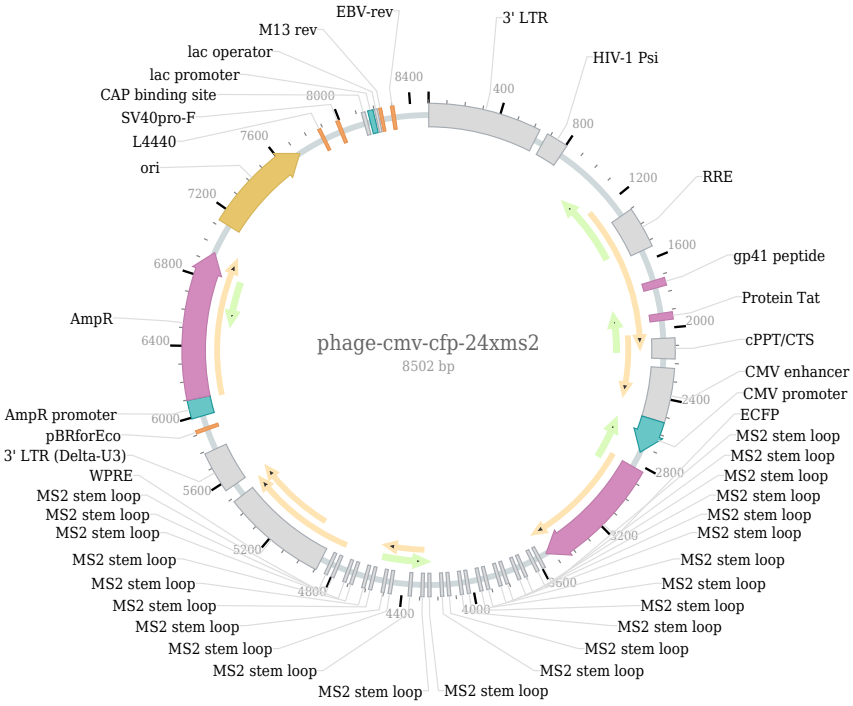
phage-cmv-cfp-24xms2

Vector ID	V000457
Antibiotic Resistance	Ampicillin
Length	8502 bp
Vector Type	Mammalian Expression, Lentiviral

Product Information

Replication Origin	ori
Promoter	CMV
Cloning Method	Restriction Enzyme
5' Primer	CMV-F
3' Primer	WPRE-R (5'-CATAGCGTAAAAGGAGCAACA-3')
Growth Strain(s)	Stbl3
Growth Temperature	30℃
Comment	Note it is possible that the 24x MS2 repeats may recombine even in Stbl3 cells. If this occurs, try growing the plasmid at 30C instead. The MS2 system is a widely used method for labeling mRNA. Here's how it works: A genetically encoded sequence derived from the bacteriophage MS2 is inserted into the gene of interest. This sequence folds into a unique stem-loop structure known as the MS2-binding site (MBS). For example, in the case of imaging endogenous β-actin mRNA, 24xMS2 binding sites were inserted into the 3' untranslated region (UTR) of the β-actin gene. Cells are made to express the MS2 coat protein (MCP) fused to a fluorescent protein (MCP-FP). When the cells express both the gene carrying the MBS and the MCP-FP, the MCP-FP binds specifically to the MBS on the mRNA. Since MCP binds to its target RNA stem loop as a dimer, the dimerized MCP-FP can recognize and attach to the MBS. Once the MCP-FP binds to the MBS on the mRNA, the mRNA becomes fluorescently labeled. This allows researchers to visualize the mRNA under a fluorescence microscope. Because both the MCP-FP and the reporter mRNA with MBS are genetically encoded, stable cell lines or even transgenic animals can be created for long-term and in-depth studies of mRNA dynamics, such as transcription, transport, and localization in various cell types and organisms.

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 ℃.