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Supplemental information

**Rational design for controlled release
of Dicer-substrate siRNA harbored
in phi29 pRNA-based nanoparticles**

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Supplemental Materials

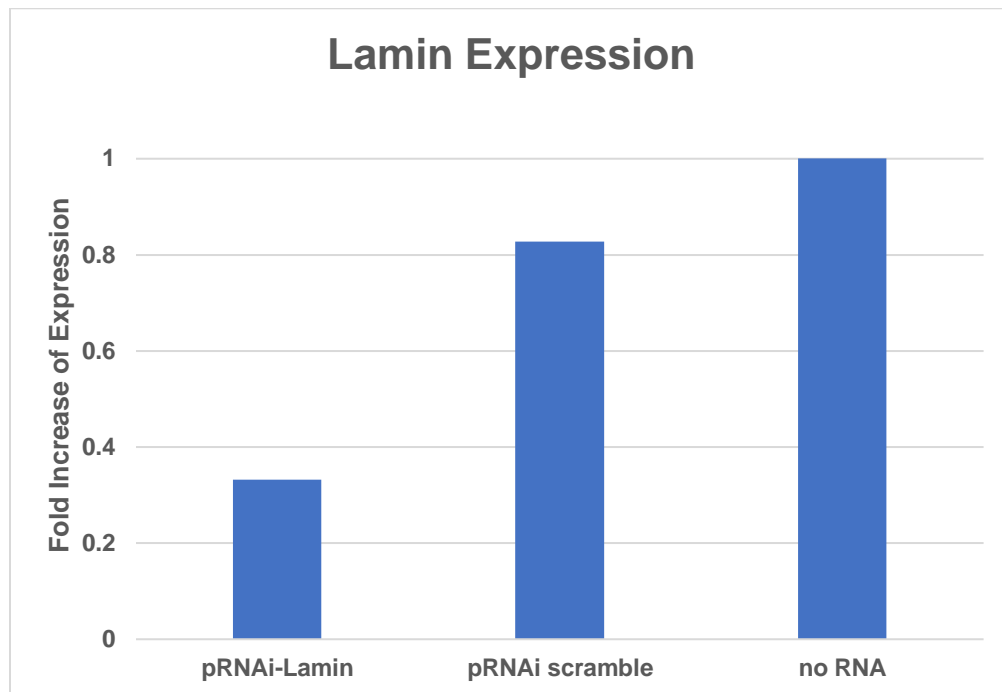


Figure S1: Quantitative qRT-PCR of Lamin expression. Lamin expression was assayed following incubation with pRNAi nanoparticles with Lamin siRNA and scrambled siRNA in KB cells. The data were analyzed by the comparative CT Method ($\Delta\Delta$ CT Method).

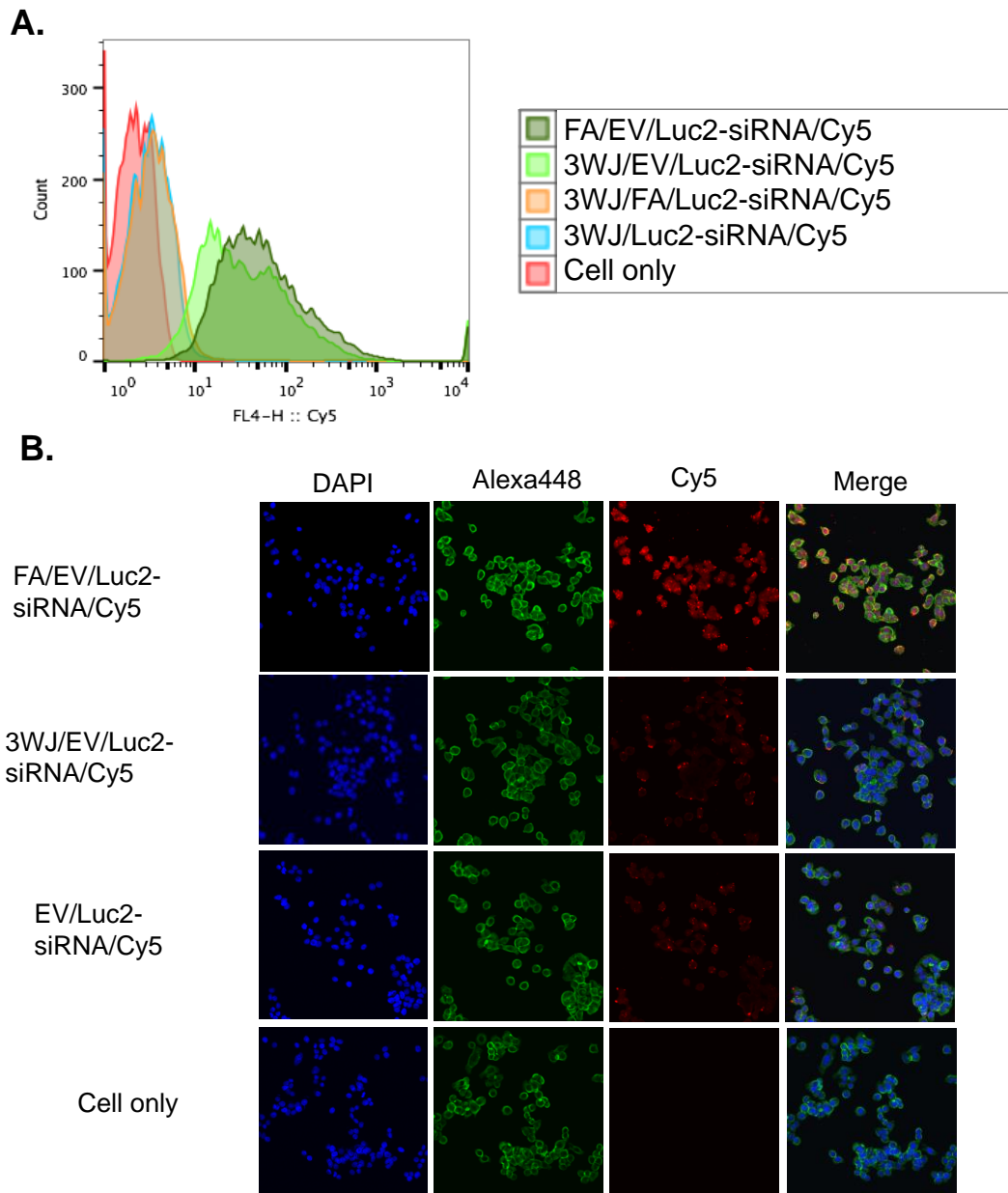
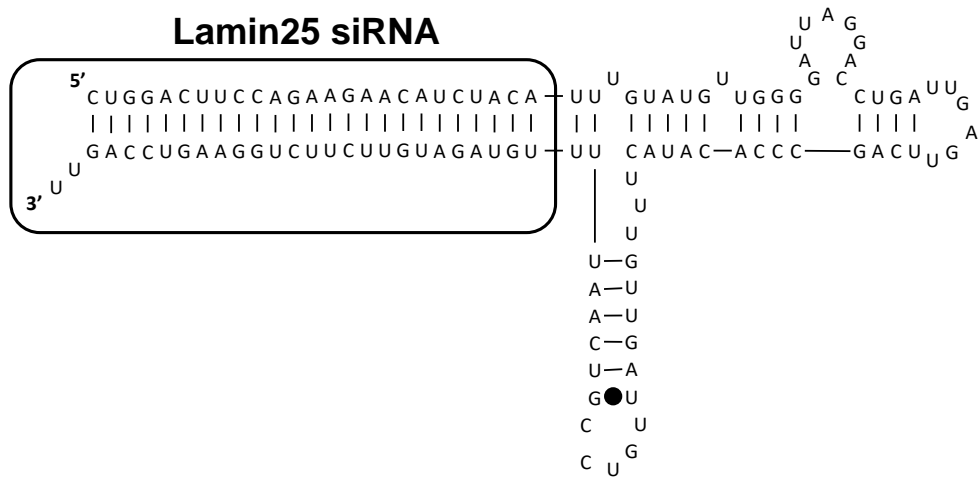


Figure S2: Binding and internalization of FA/EV carrying 3WJ/Luc2-siRNA. **A.** Binding of FA/EV/Luc2-siRNA and control groups to HT29 cells by Flow Cytometry. **B.** Images taken by confocal microscopy for internalization study (Blue: nuclei; Green: Cytoskeleton; Red: RNA).



pRNA-Lamin25 siRNA sequence:

5'-CUG GAC UUC CAG AAG AAC AUC UAC AUU UGU AUG UUG GGG AUU AGG ACC UGA
 UUG AGU UCA GCC CAC AUA CUU UGU UGA UUG UCC GUC AAU UUU GUA GAU GUU
 CUU CUG GAA GUC CAG UU-3'

Figure S3: Design of pRNA-Lamin25 nanoparticle. Secondary structuring and sequence of pRNA-Lamin25 RNA nanoparticles. Blue letter denoting the siRNA sequence. Design is based on Zhang *et al. Antiviral Res* 2009, 83:307-16.¹

Table S1: Luc2 siRNA sequences.

<u>19 bp siRNA</u>	
Sense	5'- pCUUACGCUGAGUACUUCGA-3'
Anti-sense	3'-UUGAAUGCGACUCAUGAAGCU p-5'
<u>21 bp siRNA</u>	
Sense	5'- pCUUACGCUGAGUACUUCGAUU-3'
Anti-sense	3'-UUGAAUGCGACUCAUGAAGCUAA p-5'
<u>22 bp siRNA</u>	
Sense	5'- pCUUACGCUGAGUACUUCGAUUU-3'
Anti-sense	3'-UUGAAUGCGACUCAUGAAGCUAAA p-5'
<u>23 bp siRNA</u>	
Sense	5'- pCUUACGCUGAGUACUUCGAUUUU-3'
Anti-sense	3'-UUGAAUGCGACUCAUGAAGCUAAAA p-5'
<u>24 bp siRNA</u>	
Sense	5'- pCUUACGCUGAGUACUUCGAUUUUC-3'
Anti-sense	3'-UUGAAUGCGACUCAUGAAGCUAAAAG p-5'

*p denotes 5'-phosphate

Table S2: 3WJ sequences.

3WJ-a	5'-UUGCCAUGUGUAUGUGGG-3'
3WJ-b	5'-CCCACAUACUUUGUUGAUCC-3'
3WJ-c	5'-GGAUCAAUCAUGGCAA-3'
3WJ-a/Luc2 sense siRNA	5'-CUUACGCUGAGUACUUCGAUUUUCUUGCCAUGUGUAUGUGGG-3'
3WJ-a/Luc2 sense truncated	5'-CUUACGCUGAGUACUUCGAUUGCCAUGUGUAUGUGGG-3'
3WJ-c/BBQ	5'-GGAUCAAUCAUGGCAA/BBQ-3'

Supplemental References

1. Zhang, HM, Su, Y, Guo, S, Yuan, J, Lim, T, Liu, J, Guo, P, and Yang, D (2009). Targeted delivery of anti-coxsackievirus siRNAs using ligand-conjugated packaging RNAs. *Antiviral Res* **83**: 307-316.