

Supplementary Material

A novel method to produce armored double-stranded DNA by encapsulation of MS2 viral capsids

Applied Microbiology and Biotechnology

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Running title: Armored double-stranded DNA produced by MS2 bacteriophage

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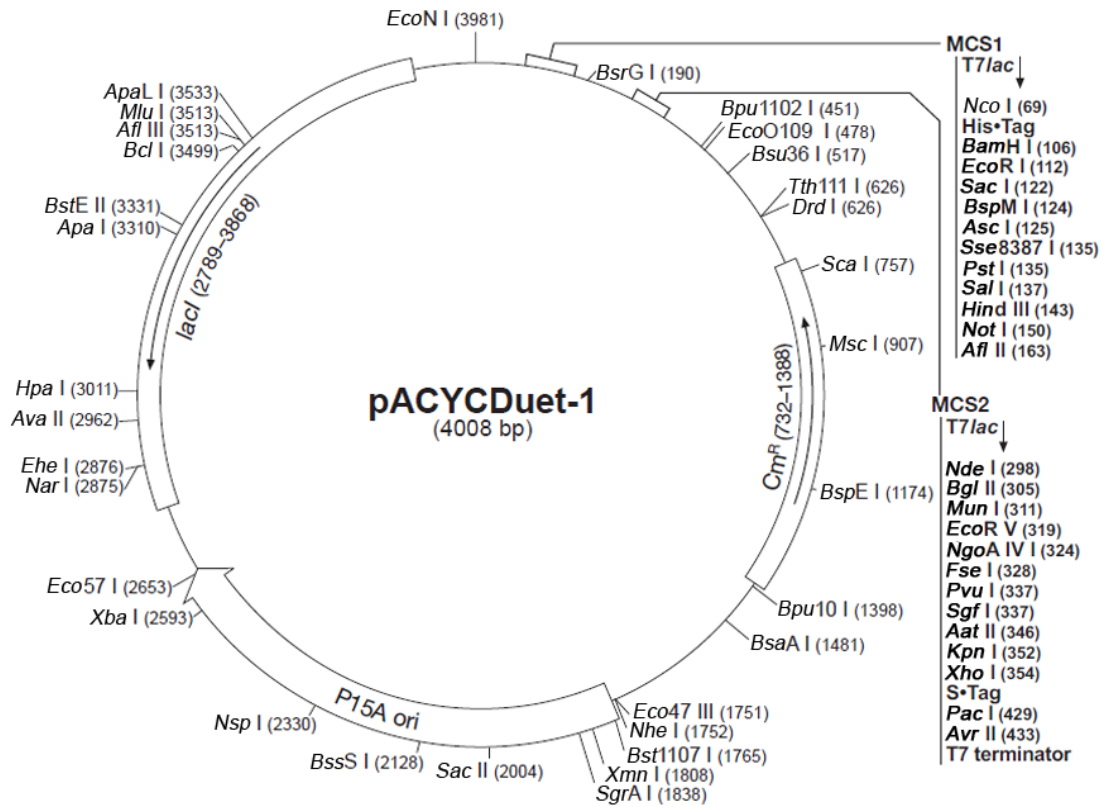


Fig. S1 The map of the plasmid pACYCDuet-1. The sequences of bacteriophage MS2 CP and maturase genes (81–1749 nt) were inserted into the MCS1 of the vector between *Bam*HI and *Hind*III, generating the recombinant plasmid for the expression of MS2 VLPs.

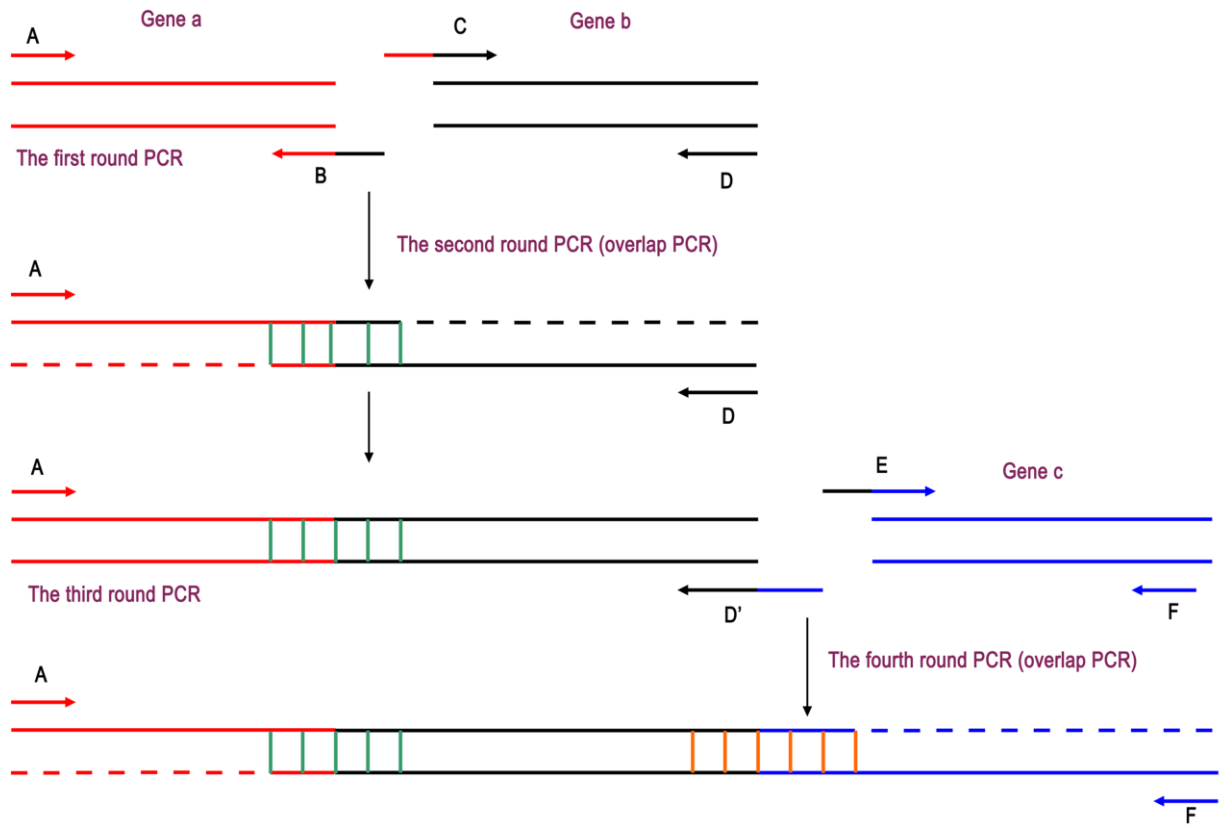


Fig. S2 Schematic diagrams for DNA fragments construction by overlapping extension PCR. In the first-round PCR, gene a and gene b represent C (nt 1211–2440, 630 bp) and S (nt 121–840,720 bp) regions of HBV DNA, the E6 (nt 26–820,795 bp) and L1 (nt 6151–7069, 919 bp) regions of HPV-16 DNA, the E6 (nt 101–1342, 1283 bp) and L1 (nt 6265–71246, 860 bp) regions of HPV-18 DNA. In the second round PCR for extension, primer sets HBV-SF and HBV-CR, HPV 16-E₆F and HPV 16-LR, and HPV 18-E₆F and HPV 18-LR were used to obtain overlapping fragments of 1.3 kb, 1.7 kb and 2.1 kb, respectively. Gene c representing the E1 region (nt 1103–2807, 1705 bp) of HPV-16 or E1 region (nt 2047–2987, 941 bp) of HPV-18 was amplified in the third round PCR, as well as the 1.7 kb and 2.1 kb DNA using primers HPV 16-E₆F and HPV 16-L₁R, and HPV 18-E₆F and HPV 16-L₁R. In the fourth round PCR for extension, primers HPV 16-E₆F and HPV 16-E₁R, and HPV 18-E₆F and HPV 18-E₁R were used to amplify the overlapping fragments of 3.5 kb for HPV-16 and 3 kb for HPV-18. Finally, a 6.5-kb fragment containing HPV-16 DNA of 3.5 kb and HPV-18 DNA of 3 kb were obtained using the same method.

TABLE S1 Primers used in the overlapping extension PCR

Primer	Sequence(5'-3')
HBV-SF	AATCTTCTCGAGGACTGGGGA
HBV-SR	AGGGGAAAAAGTTGCATGGTAGGGTTCAAATGTATACCCAAAGAC
HBV-CF	GTCTTTGGGTATACATTTGAACCCTACCATGCAACTTTTTCCCCT
HBV-CR	TTCCC GAGAT TGAGA TCTTC T
HPV 16-E ₆ F	AAGGGCGTAACCGAAATCG
HPV 16-E ₆ R	AAAAAAATAGGGAAAACGTTTACGGTGTGCCCATTAACAGGTCTT
HPV 16-L ₁ F	AAGACCTGTTAATGGGCACAC GATGTCTCTTTGGCTGCCTA
HPV 16-LR	GTTTGGCCTTCAATCCTGCT
HPV 16-L ₁ R	CGTTTTAGAACCTGTACTGCATCTCGTTTGGCCTTCAATCCTGCT
HPV 16-E ₁ F	AGCAGGATTGAAGGCCAAACGAGATGCAGTACAGGTTCTAAAACG
HPV 16-E ₁ R	TGTGTTAGTATTTTGTCTGACACA
HPV 18-E ₆ F	TACTATGGCGCGCTTTGA
HPV 18-E ₆ R	TGACAAATATCCAATGGTACCTCACTTCCACTTCAGAACAGCCATAGC
HPV 18-L ₁ F	GCTATGGCTGTTCTGAAGTGGAAGTGAGGTACCATTGGATATTTGTCA
HPV 18-LR	ACGTACACGCACACGCTTG
HPV 18-L ₁ R	TCAAATGCCATATCGCTTTCAACGTACACGCACACGCTTG
HPV 18-E ₁ F	CAAGCGTGTGCGTGTACGTTGAAAGCGATATGGCATTGGA
HPV 18-E ₁ R	TGTCTGTATGCCATGTTCCCT
168 over-E ₆ F	AGGGAACATGGCATAACAGACAAAGGGCGTAACCGAAATCG
168 over-E ₁ R	CGATTTCCGGTTACGCCCTTTGTCTGTATGCCATGTTCCCT