

Isolation of polyvalent bacteriophages using sequential multiple host approaches

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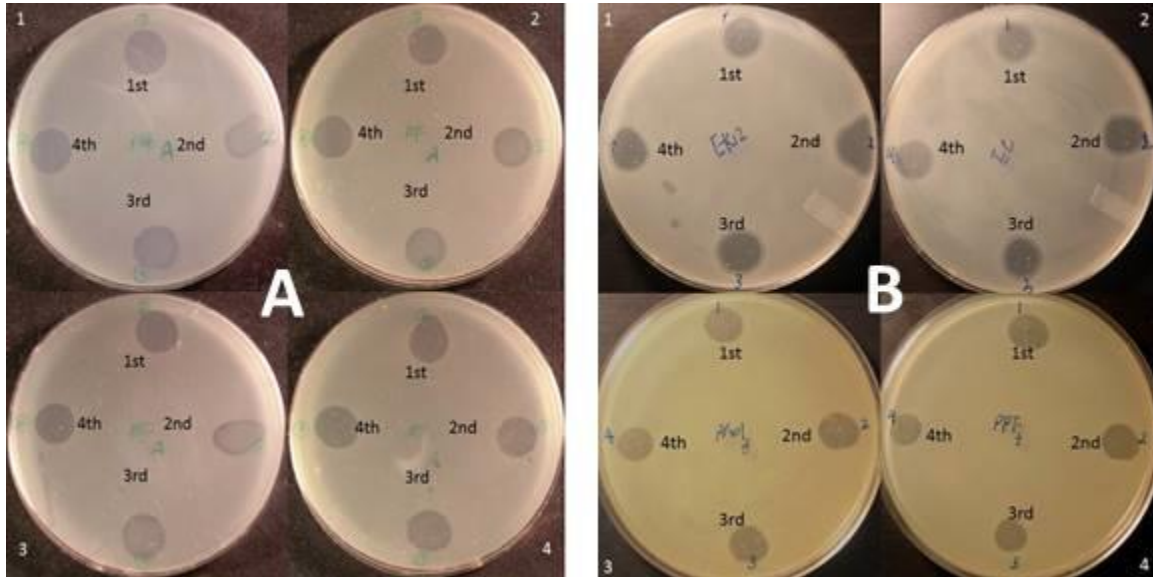


Figure S1 **Spot tests results of phage PX1(A) and PEF1(B)**. Phage PX1 and PEF1 formed clear lytic zones on the lawn of different hosts. (A1) *P. aeruginosa* PA01, (A2) *P. CF600*, (A3) *P. putida* F1, and (A4) *P. syringae* van Hall. (B1) *E. coli* K12 (with halo), (B2) *E. coli* C3000 (with halo), (B3) *P. aeruginosa* PA01, and (B4) *P. putida* F1. 1st stands for 1st generation of PX1, 2nd stands for 2nd generation of PX1, 3rd stands for 3rd generation of PX1, 4th stands for 4th generation of PX1.

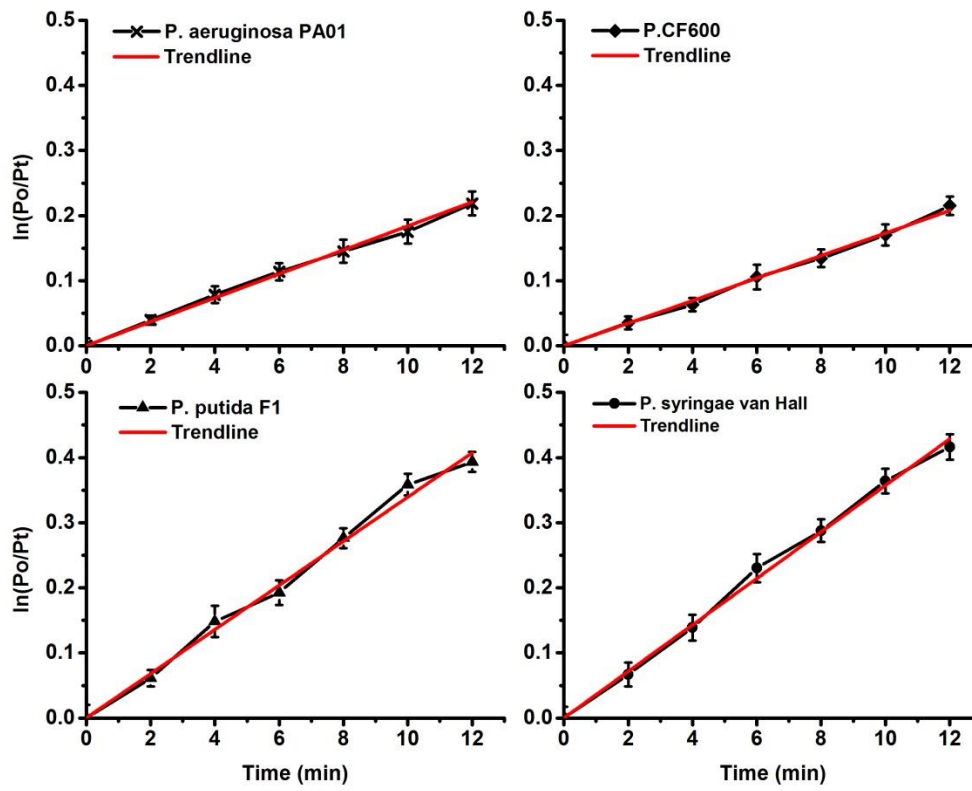


Figure S2. **The adsorption kinetics of phage PX1.** P_0 is number of free phage at time 0, and P_t is number of free phage at time t. Trendline is the regression line. Slope and R2 values are listed in Table S1. Error bars indicate standard deviations from the mean of triplicate independent experiments.

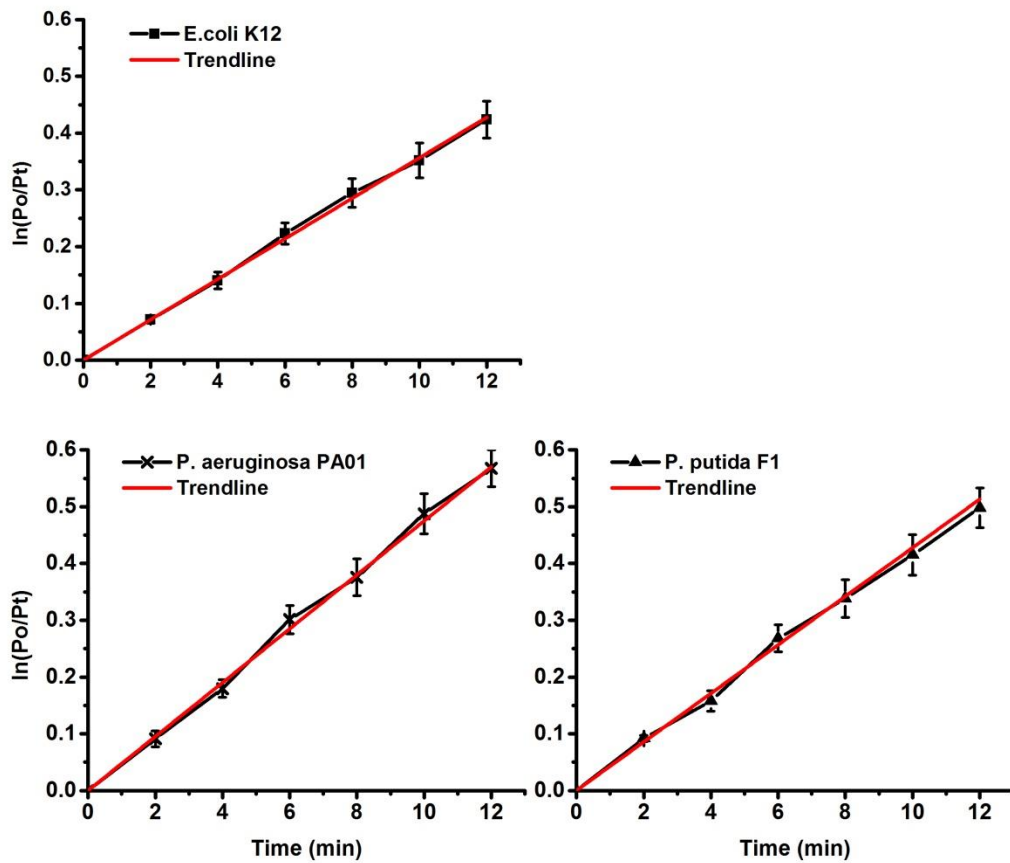


Figure S3. **The adsorption kinetics of phage Pef1.** P_0 is number of free phage at time 0, and P_t is number of free phage at time t. Trendline is the regression line. Slope and R^2 values are listed in Table S1. Error bars indicate standard deviations from the mean of triplicate independent experiments.

Table S1. Determination of phage adsorption rate constant ^a

Phage	Host	Slope ^b	R ² ^c	Host density(B) 10 ⁸ CFU/mL	Adsorption rate(k) 10 ⁻¹⁰ mL/min
PX1	<i>P. aeruginosa</i> PA01	0.0182	0.998	0.50	3.63
	<i>P. CF600</i>	0.0174	0.998	0.49	3.54
	<i>P. putida</i> F1	0.0341	0.995	0.58	5.88
	<i>P. syringae</i> van Hall	0.0356	0.998	0.61	5.83
PEf1	<i>P. aeruginosa</i> PA01	0.0478	0.998	0.56	8.53
	<i>P. putida</i> F1	0.0415	0.998	0.63	6.59
	<i>E. coli</i> K12	0.0358	0.998	0.60	5.96

^a Adsorption rate constant was calculated based on equation

$$kB = \frac{\ln(P_0) - \ln(P_t)}{t}$$

Where k is adsorption rate, B is bacterial density, P₀ is number of free phage at time 0, and P_t is number of free phage at time t.

^b Slope stands for the slope of linear regression of ln(P₀/P_t) vs t.

^c R² is the R-squared value of the linear regression of ln(P₀/P_t) vs t.

Table S2. Sequences of hosts for isolation of polyvalent phages PX series

Phage	Host 1	Host 2	Host 3	Host 4
PX1	<i>P. aeruginosa</i> PA01	<i>P. sp.</i> CF600	<i>P. putida</i> F1	<i>P. syringae</i> van Hall
PX2	<i>P. putida</i> F1	<i>P. sp.</i> CF600	<i>P. aeruginosa</i> PA01	<i>P. syringae</i> van Hall
PX3	<i>P. sp.</i> CF600	<i>P. putida</i> F1	<i>P. syringae</i> van Hall	<i>P. aeruginosa</i> PA01
PX4	<i>P. syringae</i> van Hall	<i>P. putida</i> F1	<i>P. aeruginosa</i> PA01	<i>P. sp.</i> CF600