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Formation of biofilms under phage predation: considerations concerning a biofilm increase — [Source link](#)

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Supplementary material

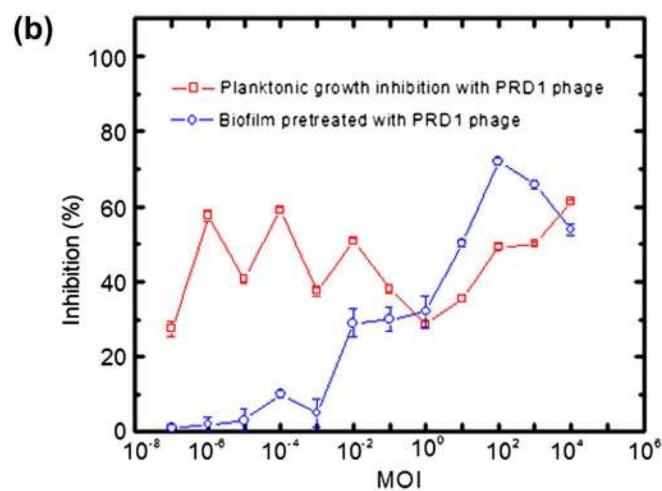
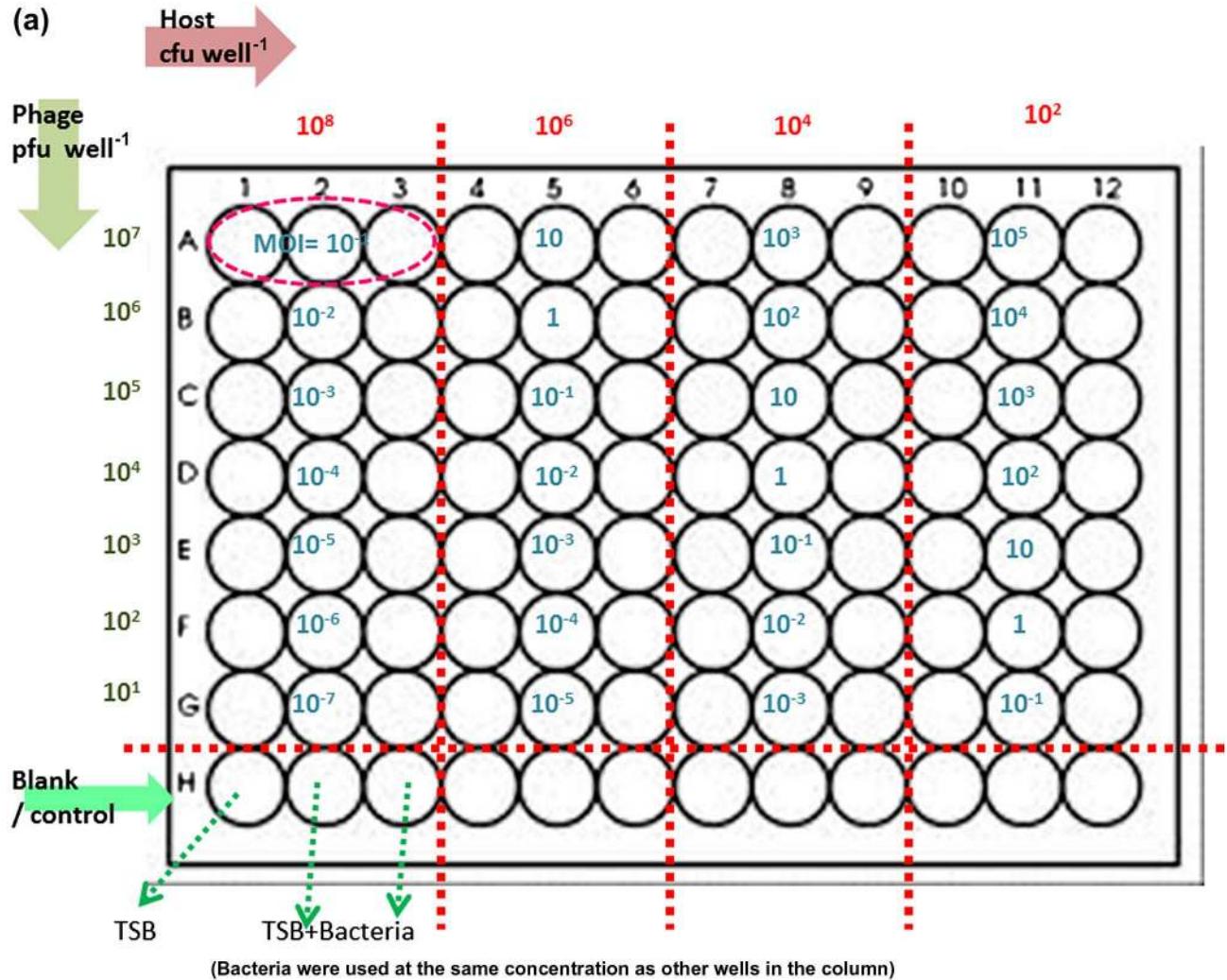


Figure S1. (a) Schematics of the experimental design for selection of phage to bacterial ratios (MOI); (b) representative results for MOIs in the range of 10^5 – 10^{-7} for *S. enterica* Typhimurium.

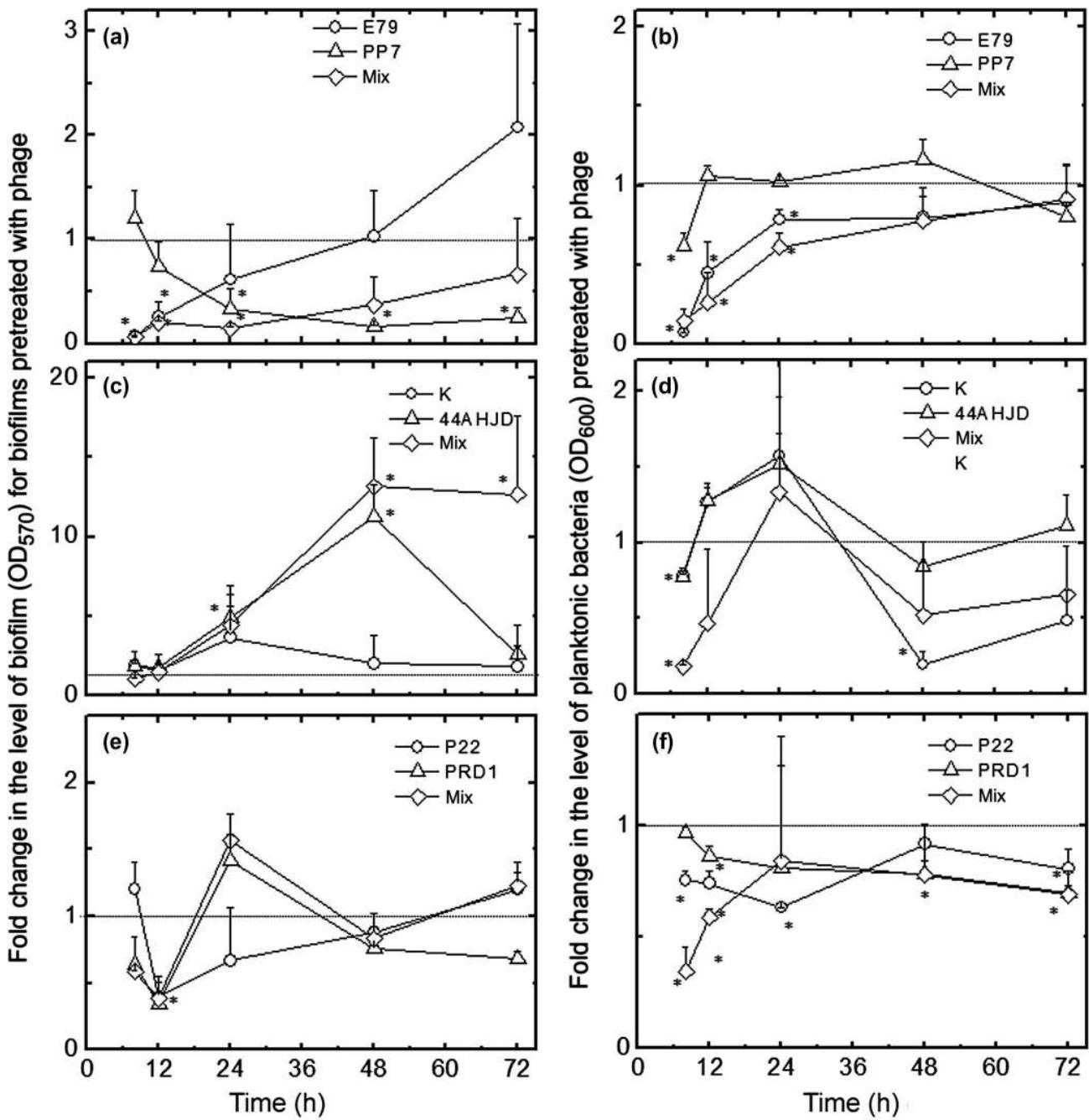


Figure S2. The effect of phage action on planktonic and biofilm bacterial load during biofilm growth (MOI=0.1). (a) *P. aeruginosa* planktonic growth, (b) *P. aeruginosa* biofilm load, (c) *S. aureus* planktonic growth, (d) *S. aureus* biofilm load, (e) *S. enterica* Typhimurium planktonic growth, and (f) *S. enterica* Typhimurium biofilm load. Biofilm load is presented in terms of fold change in the value of normalized biofilm level (OD_{570}/OD_{600}) compared to the control (=1). Planktonic load is presented in fold change from the control level (=1). *Statistically significant difference from the control ($p < 0.05$). Time zero is chosen as the time of addition of phage to the system.

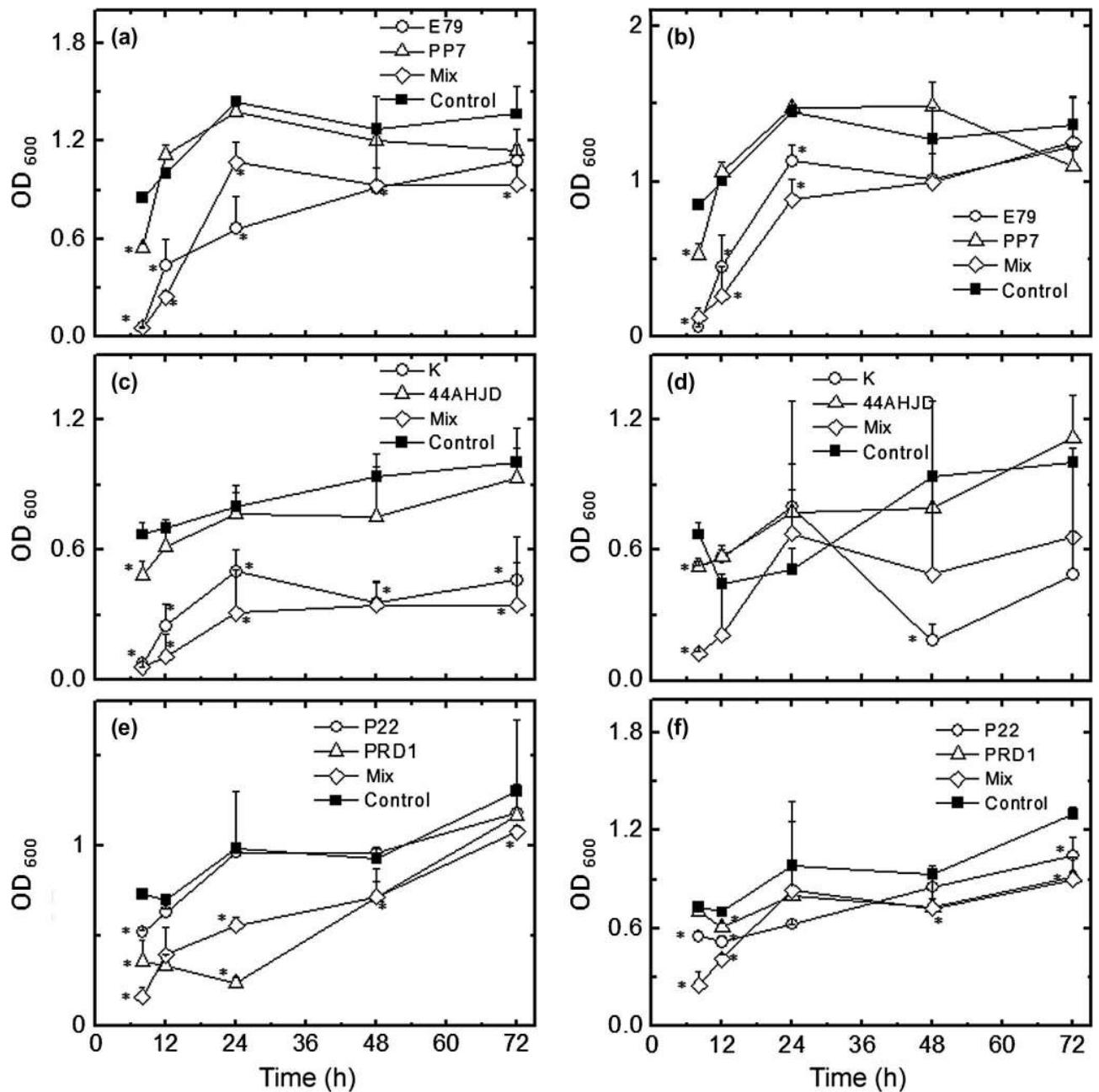


Figure S3. The effect of phage action on planktonic load for (a) *P. aeruginosa* (MOI = 10), (b) *P. aeruginosa* (MOI = 0.1), (c) *S. aureus* (MOI = 10), (d) *S. aureus* (MOI = 0.1), (e) *S. enterica* Typhimurium (MOI = 10), and (f) *S. enterica* Typhimurium (MOI = 0.1). Planktonic load is presented in terms of OD₆₀₀.

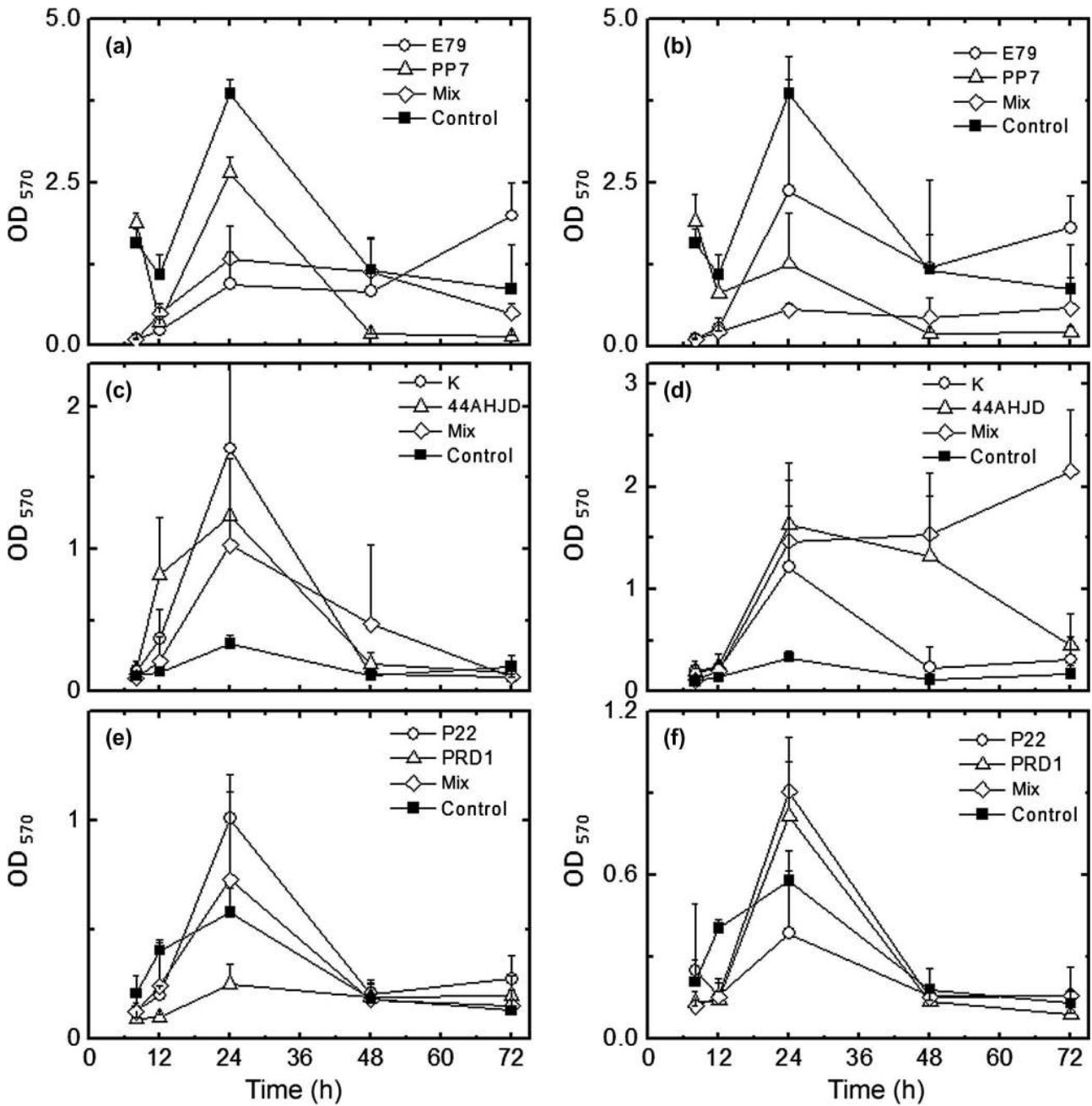


Figure S4. The effect of phage action on biofilm load during biofilm growth (MOI=0.1), (a) *P. aeruginosa* (MOI=10); (b) *P. aeruginosa* (MOI=0.1); (c) *S. aureus* (MOI=10); (d) *S. aureus* (MOI=0.1); (e) *S. enterica* Typhimurium (MOI=10); and (f) *S. enterica* Typhimurium (MOI=0.1). Biofilm load is presented in terms of OD₅₇₀.

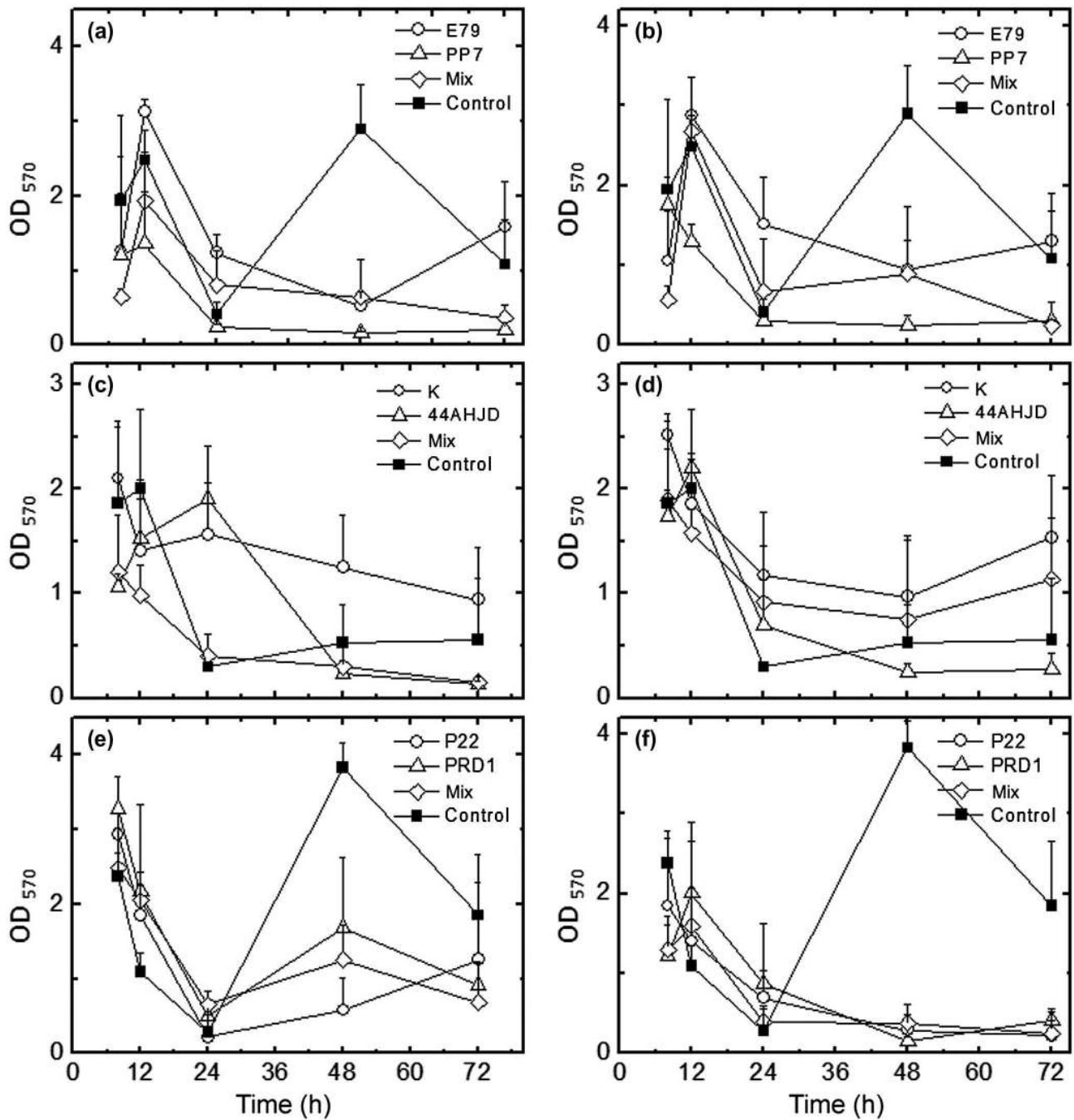


Figure S5. The level of biofilm after 48 h post treated with phage, (a) *P. aeruginosa* (MOI=10), (b) *P. aeruginosa* (MOI=0.1), (c) *S. aureus* (MOI=10), (d) *S. aureus* (MOI=0.1), (e) *S. enterica* Typhimurium (MOI=10), and (f) *S. enterica* Typhimurium (MOI=0.1). Biofilm load is presented in terms of OD₅₇₀.

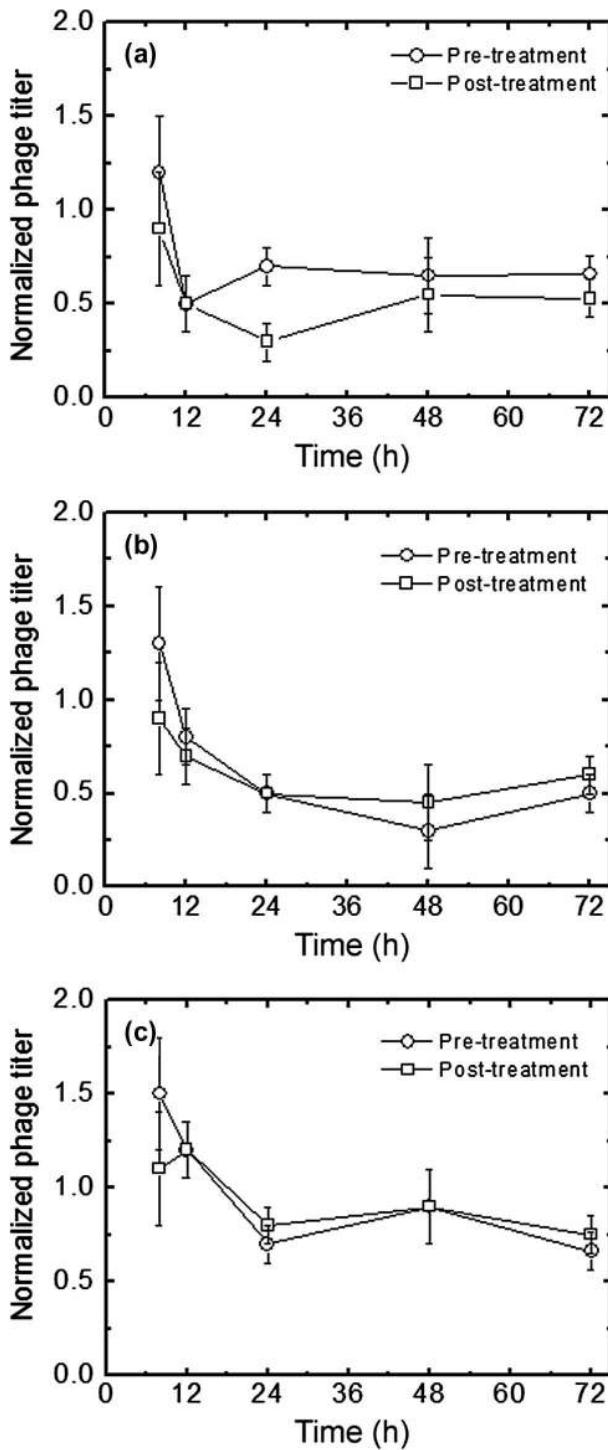


Figure S6. The change in bacteriophage titers for biofilms pre-treated or post-treated with phage mixture at MOI=10 for (a) *P. aeruginosa*, (b) *S. aureus*, and (c) *S. enterica* Typhimurium. Values presented are normalized phage titers calculated as $\log (\text{pfu ml}^{-1})$ at each time point divided by $\log (\text{pfu ml}^{-1})$ at $T=0$.

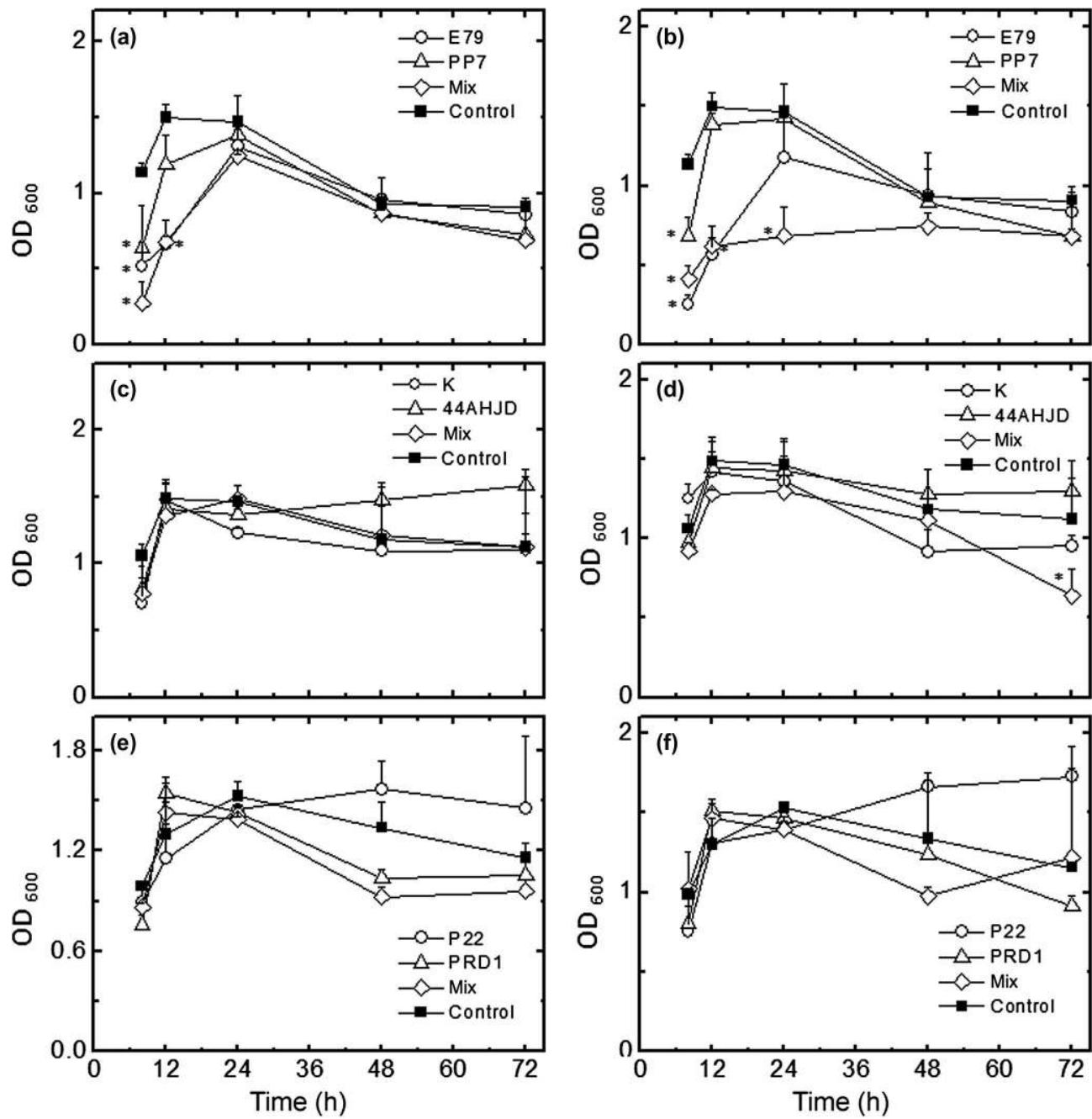


Figure S7. The change in the level of planktonic bacterial cells after treatment with phage for 48 h. (a) *P. aeruginosa* (MOI=10); (b) *P. aeruginosa* (MOI=0.1); (c) *S. aureus* (MOI=10); (d) *S. aureus* (MOI=0.1); (e) *S. enterica* Typhimurium (MOI=10); and (f) *S. enterica* Typhimurium (MOI=0.1). *Statistically significant difference from the control ($p < 0.05$).