

Dynamics of bacteriophages as a promising antibiofilm agents

ABSTRACT

Pseudomonas aeruginosa is an ubiquitous organism which has emerged as a major threat in the hospital environment. Overuse of antibiotics has also significantly increased the emergence of antimicrobial multiresistant bacteria. *P. aeruginosa* has an innate ability to adhere to surfaces and form virulent biofilms. Bacteriophage might represent one attractive solution to this problem. In this study, *P. aeruginosa* phage were utilized to Biofilm inhibition and remove. Sample collected from University sewage. Isolation was done according to Martha.R.J.Clokie protocol. Serial dilution prepared, then equally incubated with bacteria to investigate Biofilm inhibition potential. Biofilm formed base on Microplate Biofilm Assay. The effect of isolated phage investigated on biofilm remove of *Pseudomonas putida*, *E. coli* and *Acinetobacter baumannii*. *P. aeruginosa* biofilm had OD: 1.688 in 492nm. Pure phage, 10⁻² and 10⁻³ diluted phage decreased OD to 1.587, 1.341 and 1.461, respectively. Isolated phage dramatically decline OD of Biofilm of all strains. Phages have various affinity to attach to hosts, thereby it is supposed to phages compete for their receptors. Therefore it is supposed phages have most efficiency in optimum concentration to remove biofilm or growth inhibition.

Keyword: Bacteriophage; Biofilm; Planktonic; Biofilm remove; Biofilm inhibition