

Title: Matured biofilm degradation of MDR *Acinetobacter baumannii* by the tail fiber of phage ΦAB6

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Acinetobacter baumannii is undoubtedly one of the most successful pathogens responsible for hospital-acquired nosocomial infections. The biofilm degradation of multidrug-resistant *Acinetobacter baumannii* is essential for new therapeutic treatment option of nosocomial infections in hospital environment. A number of reports have demonstrated that it can form biofilms on several biotic and abiotic surfaces, providing the bacteria with protection against antibiotic treatment and the host immune defenses in vivo. During the last decades, the use of virulent bacteriophages has re-emerged for therapeutic purposes. **The aim of this study is to efficiently degraded the matured biofilm of MDR *Acinetobacter baumannii* by the tail fiber of phage ΦAB6 and antibiotic can be functional against MDR *Acinetobacter baumannii***. In this study, we used eight ΦAB6 susceptible clinical isolates of *Acinetobacter baumannii*. We performed an antibiotic susceptibility test; we noticed that those strain has multidrug-resistant characteristics. We executed a biofilm formation assay with three different time periods (24h,48h and 72h) and two different conditions (shaking and non-shaking). In 24 hours case, we observed no significant difference between shaking and non-shaking conditions. However, biofilm formation was really high in shaking condition at 48 hours which was slightly decreased at 72h. In addition, we purified the TF protein from tail fiber of phage ΦAB6 by using Nickel Column Chromatography. Finally, we will perform a biofilm treatment with phage ΦAB6 and TF protein. By these experiment, we will figure out the ability to effectively degrade matured biofilms between phage ΦAB6 and TF protein of phage ΦAB6.

Biography

Md. Shahed-Al-Mahmud has his expertise in about bacteriophagology. He is working on mature biofilm degradation by MRD *Acinetobacter baumannii* by the tail fiber protein ϕAB6 on Microbiology and Immunology department of school of Medicine at Tzu Chi University. His aim is to find out a new therapeutic way to prevent biofilm formation and biofilm degradation will open a new chapter in medical science.

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Category: Poster presentation