

Optimization the Multiplicity of Infection for Large Produce of Lytic Bacteriophage pAh6-C

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Abstract : Emerging of the super bacteria, bacteriophages are considered to be as an alternative to antibiotics. As the demand of phage increased, economical and large production of phage is becoming one of the critical points. For the therapeutic use, what is important is to eradicate the pathogenic bacteria as fast as possible, so higher concentration of phages is generally needed for effective therapeutic function. On the contrary, for the maximum production, bacteria work as a phage producing factory. As a microbial cell factory, bacteria is needed to last longer producing the phages without eradication. Consequently, killing the bacteria fast has a negative effect on large production. In this study, Multiplicity of Infection (MOI) was manipulated based on initial bacterial inoculation and used phage pAh-6C which has therapeutic effect against *Aeromonas hydrophila*. 1, 5 and 10 percent of overnight bacterial culture was inoculated and each bacterial culture was co-cultured with the phage of which MOI of 0.01, 0.0001, and 0.000001 respectively. Simply changing the initial MOI as well as bacterial inoculation concentration has regulated the production quantity of the phage without any other changes to culture conditions. It is anticipated that this result can be used as a foundational data for mass production of lytic bacteriophages which can be used as the therapeutic bio-control agent.

Keywords : bacteriophage, multiplicity of infection, optimization, *Aeromonas hydrophila*

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