



DNA Extraction and Characterization of *Salmonella*'s Bacteriophage Genome

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Abstract: Bacteriophages are infectious agents that can replicate only inside their specific bacterial host. Bacteriophage can be used as a biocontrol agent for a specific bacterial disease such as *Salmonella* and other applications. Understanding of their molecular genetics is important due to their potential applications. The objective of this research was to study three isolates of *Salmonella*'s phages and to find out the best method to isolate and characterize genomic DNA of the phages. Three different methods i.e. PEG/NaCl Method, scraping plaque method and Enrichment Method were used to make phage concentrate for genomic DNA extraction. Quantity and purity of extracted DNA was determined based on their optical density ratio of 260/280 nm and agarose gel electrophoresis. Genomic DNA size of the phages was determined by using agarose gel electrophoresis with high range ladder as a marker. The best method to prepare bacteriophage concentrates for DNA genome extraction was enrichment method. Bacteriophage concentrate from enrichment method resulted in extracted DNA of bacteriophage genome with higher concentration and purity. Based on DNA genome size determination, the bacteriophages of *Salmonella* sp were comparable with other study of *Salmonella* phages. Phage P15 with genome size of 39,5 kb was close to phage epsilon15. Phage P19 with genome size of 41 kb was close to phage ST160, and phage P38 with genome size of 48,5 kb was close to phage Gifsy-1.

Keywords: *Salmonella, phage, DNA, Enrichment method,*

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