DIFFERENT PHASE ESCHERICHIA COLI EFFECT ON T4 BACTERIOPHAGE LYSIS AND PRODUCTION

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ABSTRACT

The environment within which the micro-organisms live is constantly evolving. Under such evolving conditions, the Escherichia coli in nature face unfavorable growth conditions. This causes physiological and genetic changes with a dramatic effect on the growth of Escherichia coli and its susceptibility to bacteriophage infection. The studies of Escherichia coli using various phase culture confirm properties of its cells as in nature. In different medium the interaction between E. coli host cells and T4 bacteriophage has been different. The T4 bacteriophage has the ability to adjust according to the various growth parameters of Escherichia coli. During different phase Escherichia coli has been reported regulating up the expression of specific proteins while regulating down the others thus affecting its binding with the bacteriophage. A standard plaque assay has been used in this study in order to inspect the effects of Escherichia coli culture on formation of infective centers by T4 bacteriophage.

This study characterizes the influences of well-defined physiological conditions on Escherichia coli growth and its interactions with T4 bacteriophage. In our present study we observed that the maximum growth and lysis of T4 bacteriophage was in stationary phase. T4 bacteriophage production and lysis was also good in log phase but in lag phase and death phase production and lysis activity was less as compared to other mentioned phase.

KEYWORDS: T4 Bacteriophage, E. coli, Phase, Lysis, Production