Abstract several limitations, in particular insufficient sampling

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Abstract

This experiment was aimed at investigating the effects of MSa bacteriophages on such antibiotic-resistant bacteria as Staphylococcus aureus. At the very beginning, it was hypothesis that MSa bacteriophages would either destroy the bacterium or suppress its growth. We can say that the findings only partially support the initial hypothesis because this research has several limitations, in particular insufficient sampling and shortage of time.

Introduction

The experiment, which has been carried out, aims to test the use of phage therapy on an antibiotic-resistant bacterium, in particular on Staphylococcus aureus or golden cluster seed, as it is also known.

This microorganism is known to survive the exposure to antibiotics (Lindsay, 240). This pathogen can be the cause of septic arthritis and endocarditis (Fischetti, 224). Phage therapy is considered to be an alternative to antibiotics. It relies on the use of bacteriophage or those viruses, which destroys or slows down the growth of a pathogen, yet remains harmless to the beneficial bacteria and host body (Grath & Sinderen, 3).

One should note that this question has long been of great interest to many biologists. To prove this point, I can refer to the studies, conducted by Rosental and Bulov in early sixties and to the most recent research, made by a group of authors under the leadership under the direction of Petra Kramberger (2010). The main objective of these studies was to develop a bacteriophage that would destroy this bacterium. During this experiment, I attempted to investigate the effects of MSa phages against Staphylococcus aureus. The initial hypothesis was that these MSa phages would destroy the cell of the bacterium. This hypothesis has been based on the recent research findings, this phages has a negative effect on Staphylococcus aureus (American Society for Microbiology, unpaged).

Materials and methods

In order to perform this experiment I took five samples of water, contaminated with Staphylococcus aureus.

Each of these samples was preserved in 50 Ml tubes. I have decided to work with five samples mostly because I wanted to determine whether the concentration of phages within the sample affects the bacteria in any way. The study has been conducted within ten days. While observing the interplay of MSa phages and Staphylococcus aureus, I paid attention to possible growth suppression effects or signs of lysis, in other words, the dissolution of a cell. I have introduced different number of phage colonies in different samples. It would be better to illustrate this in table format: The sequence number of samplePhage ConcentrationSample OneOne Phage ColonySample TwoTwo Phage ColoniesSample ThreeThree Phage ColoniesSample FourFour Phage ColoniesSample FiveFive Phage Colonies