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CONSTRUCTION OF BACTERIOPHAGES GENOMIC LIBRARY

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Bacteria have developed a wide range of antiviral defenses to protect themselves from infection by their own viruses (bacteriophages). One of the defense strategies that bacteria use against their viruses is abortive infection (Abi). The Abi system acts as a cellular response to viral infection, with virus-infected cells dying or slowing down their metabolism, thereby limiting further phage multiplication in the population [1].

Although the understanding of bacterial defense mechanisms has increased considerably, one of the main unanswered questions is how the Abi system is activated in the event of phage infection. So far, in the study of bacterial defense systems, one approach to finding factors that activate bacterial defense systems has been to study bacteriophage mutants that evade bacterial defense systems, but this approach has drawbacks [2].

Our work aims to address the shortcomings of phage mutant assays and to propose a new, faster method to simultaneously screen more bacterial defense systems for their activating factors. This will be done using libraries of random genomic DNA fragments from bacteriophages.

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