Isolation and Characterization of Bacteriophages Effective at Killing Enterococcus faecalis

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The bacterium Enterococcus faecalis is a common source of hospital acquired infections due to its intrinsic resistance to cephalosporins. As antibiotics become less effective at preventing and ending infections of E. faecalis, there becomes a greater need for a new strategy of killing these bacteria. One such strategy is the use of bacteriophages. Thus, we isolated ten different bacteriophages specific to Enterococcus faecalis from environmental samples. Through plaque assays on 24 different strains of Enterococci, the bacteriophages demonstrated varying abilities to lyse the host strains. The plaque assays revealed that many bacteriophages had broad abilities to lyse bacteria, but some strains of bacteria could not be lysed by any bacteriophage. By using a pool of Mar transposon mutants, it was found that the fabG gene in E. faecalis may be important for a phage to be capable of lysing a bacterium.

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