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In-vivo efficacy of a bacteriophage cocktail for the control of multiple drug-resistant (MDR) *Acinetobacter baumannii* infection of lungs

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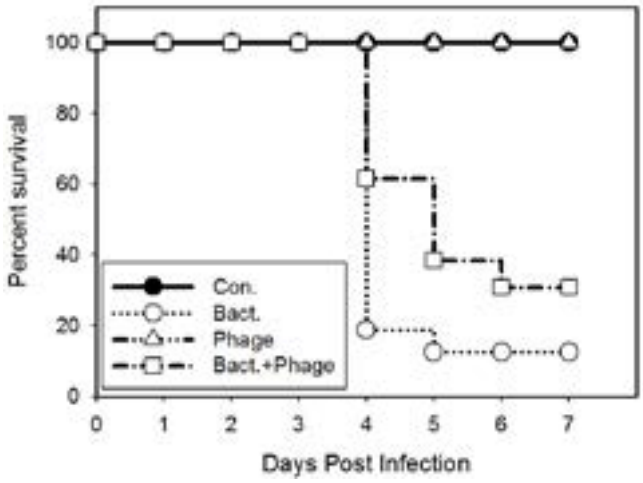
Acinetobacter baumannii is a gram-negative bacillus that can be widely found in environment. Recently, there is an increase in multiple drug-resistant (MDR) *A. baumannii*. Hence, it becomes a significant clinical issue. For the treatment of infection by MDR *A. baumannii*, bacteriophage has been studied as an antibiotic alternative. In this study, we newly isolated 22 different bacteriophages infecting MDR *A. baumannii*. Among them, 5 bacteriophages were selected and tested *in-vivo* as a cocktail using mice model. First, inflammatory responses of mice which were injected with the phage cocktail by intraperitoneal, intranasal, or oral route was investigated. Inflammatory response of mice injected intraperitoneally was higher than that of others. Second, survival rate of mice infected with *A. baumannii* with and without bacteriophage treatment was tested. Mice treated with phage cocktail showed two-fold higher survival than those untreated in 7 days post infection. In addition, 1/100 reduction of the number of *A. baumannii* in the lung of the mice treated with the phage cocktail was observed. In conclusion, bacteriophages could be an effective alternative to antibiotics for infectious diseases caused by antibiotic-resistant bacteria.



Biography

Kyoung Eun Cha is a student at the Hankuk University of Foreign Studies and is carrying out overall work of The Bacteriophage Bank of Korea. Her work is focused on collecting and characterizing phages from sewage, food, water-treatment plant, wetlands, and animal feces.

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