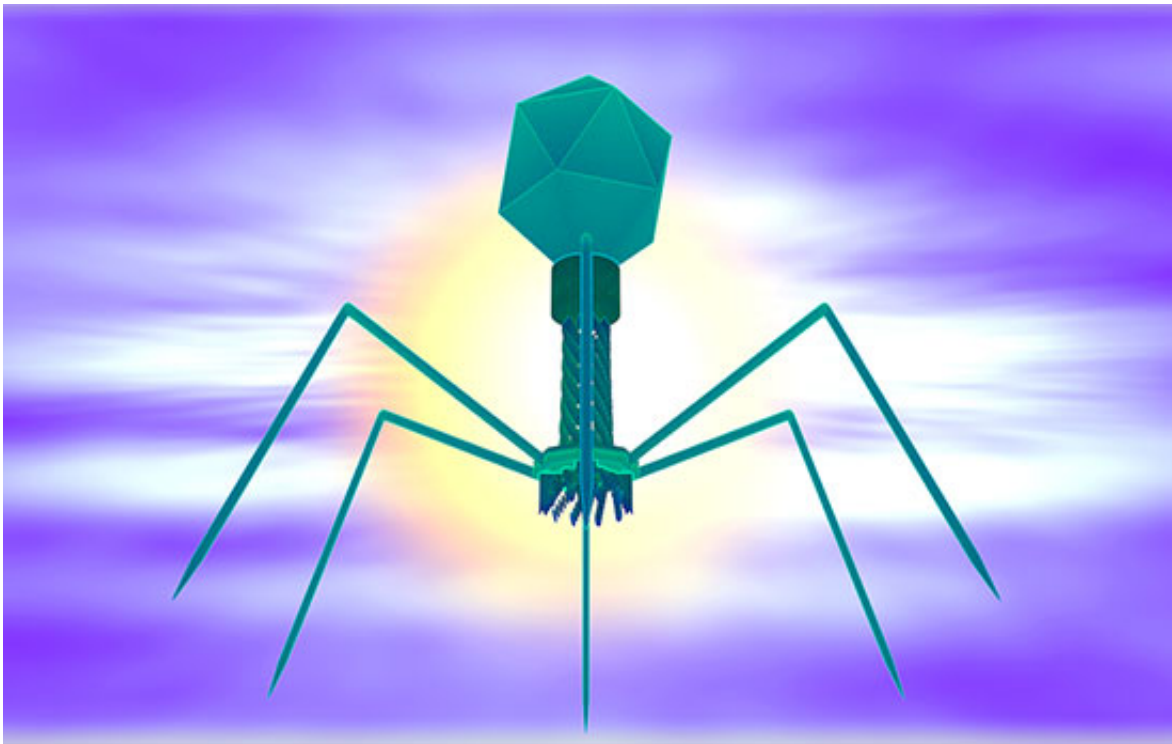


Addressing superbug resistance with phage therapy

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Credit: Monash University

International research involving a Monash biologist shows that bacteriophage therapy – a process whereby bacterial viruses attack and destroy specific strains of bacteria - can be used successfully to treat systemic, multidrug resistant bacterial infections.

The latest research, published in *Antimicrobial Agents &*

Chemotherapeutics has wide implications for antibiotic resistance, which the World Health Organization has described as a major threat to public health.

One of the study's authors, Dr Jeremy Barr from the Monash School of Biological Sciences, said that antibiotics can no longer be solely relied upon to halt the spread of [antibiotic-resistant bacterial infections](#).

"Last year we saw a patient die in the USA from a bacterial infection resistant to all antibiotics. 'Pan-resistant' strains of bacterial infection are inevitable," Dr Barr said.

Dr Barr's lab at Monash University studies bacteriophage - specialist viruses that only infect and kill bacteria - and investigates their role and function in the human [body](#).

Bacteriophage (or phage for short) are the most abundant and diverse microbe found in the body. Phages control and manipulate bacterial populations, prevent infection and disease and have important roles in regulating the microbiome and body that have not yet been fully elucidated.

The latest research, published in the prestigious Antimicrobial Agents & Chemotherapeutics, follows the remarkable case of a 69-year-old diabetic in the US who was treated successfully with bacteriophages after being infected with a life-threatening multidrug-resistant strain of *Acinetobacter baumannii*.

The study is significant because it is the first time bacteriophage therapy has been used in the USA to treat a patient who had an antibiotic-resistant, blood stream infection.

"Antibiotics were no longer working, and this infection would have very

likely killed him had we not intervened."

More information: Robert T. Schooley et al. Development and use of personalized bacteriophage-based therapeutic cocktails to treat a patient with a disseminated resistant *Acinetobacter baumannii* infection, *Antimicrobial Agents and Chemotherapy* (2017). [DOI: 10.1128/AAC.00954-17](https://doi.org/10.1128/AAC.00954-17)

Provided by Monash University

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