Can Bacteriophages Contribute Massively to the Food Safety Future?

Bacteriophages As a Biosensor Tool for a Detection and Biocontrol of Foodborne Pathogens with Emphasis on the Detection of Shiga Toxin Producing E. coli.

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Targeting Non O157:H7 Shiga Toxin-Producing E. coli (STEC)

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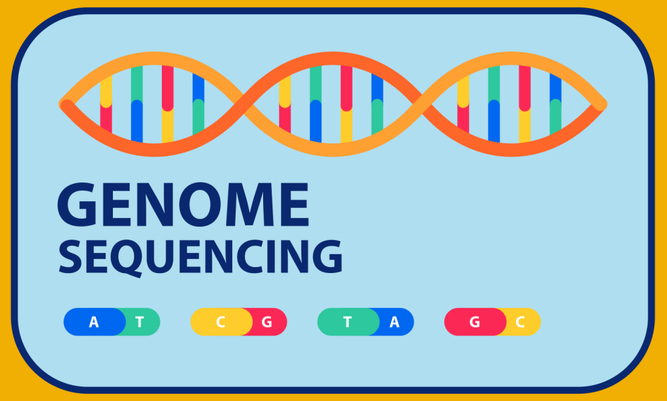
- Isolation of 35 lytic bacteriophages against the "big six" STEC serotypes.
- Selection of 14 phages for further characterization.

Bacteriophages & Food Safety

- What are bacteriophages?
- Their role in detecting foodborne pathogens.

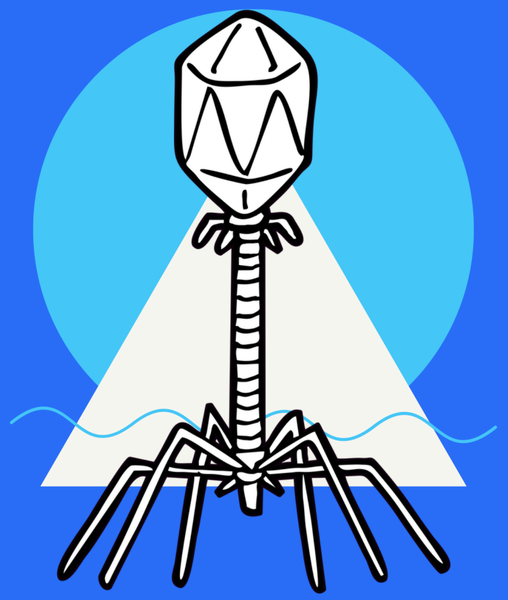


Identifying the Best Phage for Detection

Selection Criteria

- Host range, morphology, and adsorption.
- Selection of AG2A phage for its high specificity against E. coli O45:H2.
- Genome sequencing of AG2A.

AG2A Phage & Food Safety



AG2A phage immobilized onto ColorLok paper.

Detection of E. coli O45:H2 in media and food.

Phage capture-amplification assay for rapid detection.

The Future of Food Safety with Bacteriophages

Initial detection as low as 10 CFU/mL in TSB and ground beef.

Rapid results within 8 hours using real-time PCR.

Stability of immobilized phage over a week.

Immense potential for detecting foodborne bacterial pathogens.

Bacteriophages: A Revolution in Food Safety

- Bacteriophages offer a promising tool for food safety.
- Rapid, specific, and efficient detection of pathogens.
- A step towards a safer food future.

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Thank You!

For Any Question..
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