

Patent Status

US provisional application
62/028,561

License Status

Licenses and
collaboration available

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Printed Phage Enable New Tools for Food Safety

Opportunity

Bacteriophage are viruses that can kill bacteria, and have long been explored as a way to detect or control certain bacteria. This technology comprises bio-inks that contain phage, and which can be printed onto paper while maintaining their function. This bioactive paper can be used to kill or control bacteria in food packaging applications, or to detect bacteria in a food manufacturing environment or environmental sample.

Proof-of-concept trials have shown that a dipstick made with the printed paper is able to detect 10 cfu/mL *E. coli* O157:H7 in spinach leaves or in liquid broth within one working day. This 'real-world' use of a food matrix demonstrates the commercial utility of the bioactive paper.

Applications and Advantages

- Rapid detection of pathogens in manufacturing facilities or water/environment testing using simple dipstick methods
- Manufacturing is inexpensive
- Food safety applications available, via using paper in packaging

Keywords

- phage • bacteriophage • printing • *Listeria* • food safety • piezoelectric • bio-ink • packaging • *E. coli* • *Salmonella* • bio-active paper • water •

