Phage Wrapping to Enhance Sensitivity of Novel Phage Nanowire Biosensors

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BRIEF DESCRIPTION

The Weiss and Penner labs at the University of California, Irvine have developed a portfolio of technologies based on M13 bacteriophage viruses that have successfully been incorporated into nanowire arrays. The resulting label-free phage-based biosensors allow direct electrical resistance measurements to quickly detect low concentrations of target analytes.

Recently the Weiss and Penner labs have developed a unique combination of molecules used to wrap the phage to enhance and exploit the aforementioned phage-based biosensors. This unique combination of molecules decreases non-specific binding to phages and increases the sensitivity and signal-to-noise of the phage-based biosensors.

SUGGESTED USES

The phage-based biosensors may be used to diagnose disease in patients.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,168,306	11/09/2021	2014-469

STATE OF DEVELOPMENT

A prototype of the phage array biosensors has been made.

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OTHER INFORMATION

KEYWORDS

Phage, M13, Bacteriophage, Array

CATEGORIZED AS

- **Biotechnology**
  - Health
  - Proteomics
- **Medical**
  - Devices
  - Screening
- **Nanotechnology**
  - NanoBio
- **Sensors & Instrumentation**
  - Biosensors
  - Environmental Sensors

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