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FOOD & WATER BIOHAZARD ANALYZER

BIOTECHNOLOGY

Biohazard analyzer that enables rapid and ultrasensitive detection of a wide panel of pathogens. The device is portable and fully-automated for use in remote locations.

TECHNOLOGY TYPE

Bioinformatics
Agriculture
Infectious Disease

STAGE OF DEVELOPMENT

- Proof of concept demonstrated for cryptosporidium, E. coli, Norovirus and more.

- Bench prototype in development.

- Ongoing research to enable detection of the remaining pathogens.

FUNDING TO DATE

Over \$1 million in grants and sponsored research to date.

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TECHNOLOGY SUMMARY

Current pathogen detection methods are time and cost intensive, requiring over 24 hours for testing and analysis.

The proposed biohazard analyzer enables simultaneous detection of 15 different bacteria, protozoa, and viruses within three hours. The analyzer utilizes magnetic beads and antibodies to capture target pathogens. The resulting nanoshells allow even low concentrations to be detected through comparison with known samples. This device is transportable, enabling use as a laboratory bench-top sensor or as a fully automated sensor for remote areas, such as military deployment. This has potential applications for use in military deployment, humanitarian efforts, disaster relief, and food and beverage manufacturing.

FEATURES AND BENEFITS

- Allows simultaneous detection of 15 pathogens that commonly affect humans; 9 pathogens have been demonstrated.
- Reduces analysis time to less than 3 hours.
- Enables fully automated biohazard sampling, concentration, and detection.
- Increases accuracy through higher sensitivity and limits of detection.
- Facilitates point of use testing.

INVENTOR PROFILE

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