(SD2022-014) Neural Signal Detection of Immune Responses: miniaturized wireless data streaming system to detect early infection

Tech ID: 32582 / UC Case 2021-Z08-1

BACKGROUND

A promising area of clinical research has been growing in wearable diagnostics that has proven to be a powerful tool in healthy physiological as well as disease diagnostics. As the field grows and develops, a number of specializations are already emerging including diagnostics focused on: cardiac dysfunction, epilepsy, and most recently infectious disease detection.

TECHNOLOGY DESCRIPTION

Researchers from UC San Diego developed a device that automatically detects an immune response based on neural signals captured transcutaneously. Sensors used to capture neural signals are wearable. Neural signals are captured transcutaneously. With enough classified data, types of infections and specific pathogens can be identified in the future based on detected neural signals.

This device has potential to revolutionize early infection detection (up to 24 hours prior to other technologies), radically revolutionizing current healthcare practice by providing pre-sickness diagnosis thus expediting treatment and preventing pathogen spread. This work stands to be transformative for fundamental improvement in the situational awareness of immediate signs of both natural or biological warfare infection spread, enabling circumvention of surprise and improvement in national health security preparedness.

APPLICATIONS

Medical devices for noninvasive early stage detection of disease states.

This device technology and system would serve as a first line diagnostic for the at home consumer, the patient in the hospital or clinic setting and in disaster areas surveilled by our military services in the biodefense and medical countermeasure forces.

ADVANTAGES

STATE OF DEVELOPMENT

prototype of device is being tested and refined.

INTELLECTUAL PROPERTY INFO

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OTHER INFORMATION

KEYWORDS
neural signal, immune response detection, transcutaneous, wearable sensor array

CATEGORIZED AS
- Medical
  - Devices
  - Diagnostics
  - Disease: Infectious Diseases

RELATED CASES
2021-Z08-1

This patent-pending technology is available for commercial development. Please contact UCSD for licensing terms.

RELATED MATERIALS

- Detecting Infection Before Symptoms Occur by Monitoring the Vagus Nerve - 08/01/2019

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