Medical Device: Electrode for Wearable Point-of-Care Health Monitoring

Tech ID: 32528 / UC Case 2020-615-0

BRIEF DESCRIPTION

Researchers at the University of California, Irvine have fabricated a flexible and unobtrusive wearable electrode that can detect glucose at a very low limit of detection.In fact, the detection limits are the lowest ever reported for an enzyme-free sensor. This sensor is applicable for detecting glucose levels in saliva, sweat or tears, and can safely be used at home, especially by diabetic patients without the need to frequently draw blood.

SUGGESTED USES

·Wearable glucose sensor for at-home use

·Used to detect glucose levels from saliva, sweat and tears

·Can also be adapted as a sensor for cortisol and other crucial biomarkers

FEATURES/BENEFITS

·Lack of enzymes ensures no degradation of sensor components.

·Can reliably detect minute glucose level changes via saliva, sweat and tears.

·Does not require drawing blood similar to traditional methods for glucose measurements for example in diabetic patients.

TECHNOLOGY DESCRIPTION

Reliable measurement of crucial biomarkers, such as glucose, cortisol, lactic acid etc., for early detection of disease is still a challenge today. With the advent of wearable biosensors and point of care (POC) devices, regular personalized health monitoring is reaching more people at lower costs.

The researchers at the University of California, Irvine, designed an electrode that may be conveniently transferred onto flexible wearable substrates for use as a sensor. The surface area allows for more reaction sites than a typical structure of the same size. As such, this technology confers a higher signal to noise ratio (SNR) with low glucose detection limit. Additionally, this sensor is flexible and unobtrusive and resistant to degradation, rendering it scalable and commercializable.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	2023005090	02/16/2023	2020-615

CONTACT

Alvin Viray
aviray@uci.edu
tel: 949-824-3104.

OTHER INFORMATION

CATEGORIZED AS

» **Materials & Chemicals**
» Polymers
» **Sensors & Instrumentation**
» Analytical
» Biosensors
» Medical

RELATED CASES

2020-615-0

STATE OF DEVELOPMENT

Experimental, with proof of concept detection of glucose.

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5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683