Novel Composite Sensor for Detecting Free Radicals

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Technology description

Background

Reactive oxygen species (ROS) detection and measurement is frequently practiced in a broad range of medical and clinical settings. Free radicals are known to cause and/or exacerbate illnesses including cancer and neurodegenerative diseases. Currently, ROS detection includes free radical trapping and fingerprinting methods. The sensitivity of free radical methods have been shown to limit their ability to detect superoxide and hydroxyl radicals. Fingerprinting methods, on the other hand, are indirect and measure the damage caused by free radicals. There is, therefore, a need for tools and methods to directly and accurately detect and measure free radicals.

Invention Disclosure

Researchers at the University of Toledo, led by Dr. Dong-Shik Kim, have developed a sensor and method using a novel composite material for the accurate detection and measurement of free radicals.

Application area

The sensor may be used in clinical settings to detect and measure free radicals in tissue samples
The sensor may also be used in other settings such as chemical testing labs for the measurement of free radicals in other types of samples including blood and various body fluids

Advantages

The sensor may be directly inserted into the sample of interest including liquid, solid and gas samples
The sensor may provide accurate in situ real-time measurement of free radicals
Unlike conventional free radical sensors, this sensor may be reusable and universal
The sensor may increase the level of consistency in the detection of free radicals

Institution

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