



TECHNOLOGY

Rapid, Inexpensive Point-of-Care Measurement of Oxidative Stress in Biological Samples

OVERVIEW

Background

Oxidative stress, the imbalance between the production of free radicals as part of normal metabolism and the body's ability to neutralize through various natural antioxidants, has been implicated in numerous pathological conditions. Such conditions include neurodegenerative diseases, cardiovascular disease, and cancer. While several reagents are currently available to measure the total antioxidant capacity in human serum, they are plagued by differential sensitivities to different antioxidants such as glutathione, ascorbic acid, and uric acid (the common reductants in blood). A sensitive method that can consistently detect this chemical information in blood and provide an accurate extrapolation to the extent of antioxidant capacity will greatly help in early diagnosis of disease conditions.

Innovative Technology

Researchers at University of Maryland have developed a novel method using unique transition metal salt that can probe reductants in serum at very low concentrations and can separate healthy individuals from diseased individuals based on the results.

Advantages

- Accurate detection of low concentrations of reductants, especially those containing thiol groups
- Rapid, simple and inexpensive point of care system to measure oxidative stress

Applications

- Reliable point of care estimation of oxidative stress for clinical applications
- Research tool for testing potential drug candidates
- Estimation of antioxidant capacity of various foods

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

LICENSE STATUS

Contact OTC for licensing information

EXTERNAL RESOURCES

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