

# Microfluid Device for the Detection of Blood Analytes and Disease Biomarkers

**R**esearchers at the University of South Florida have successfully developed a gold nanowire based microfluidic device that can be used for the ultra-sensitive detection of cancer biomarkers and other biomolecules.

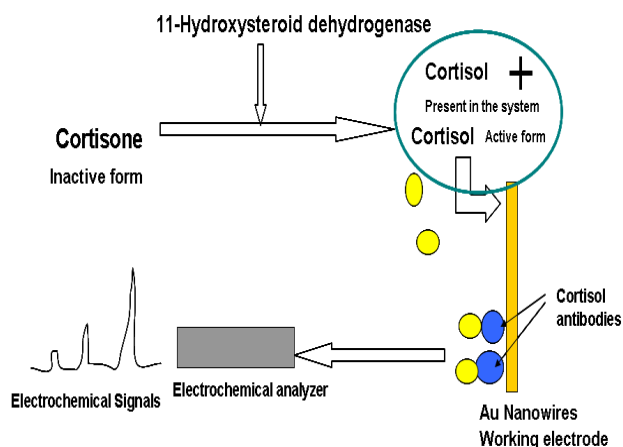
Although the adrenal glands they are very important. They produce several hormones like adrenal cortical hormones that help the body to work properly and are vital to life. Currently, there are many cortisol detection methods on the market, but they are limited due to their sensitivity, time of analysis, and cost. It is therefore imperative to develop a more sensitive and efficient assay for evaluating cortisol levels of individuals with adrenal diseases.

USF inventors have developed and successfully tested a prototype of a gold nanowire-based microfluidic sensing device that can be used for the ultra-sensitive detection of analytes such as cortisol and other biomarkers. This technology applies enzyme fragment complementation (EFC) technology, which provides a sensitive and specific method of measurement. The sensor and methods of the invention are applicable in research and various industries, such as medical diagnostics, environmental management (e.g., detection of contaminants in water and wastewater treatment systems), bioremediation, public health, and homeland security (e.g., detection of bioterrorism agents).

### ADVANTAGES:

- Economical
- Ultra-sensitive detection of analytes
- Great clinical potential

### *Ultra-Sensitive Detection of Analytes for Efficient Clinical Analysis*



### *Schematic Detection of the Cortisol*

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