## Electrochemically Identifying and Measuring Genotoxins in Water (Ramot)

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### The Invention

A field deployable device for near real-time identification and quantitiatve measurement of genotoxins in water. The device contains a low cost disposable probe head which quickly and accurately alerts if genotoxins are present at dangerous levels. The probe consists of genetically modified bacteria which are sensitive to various genotoxins and produce an electrical response proportional to the concentration of genotoxin in the water sample.

### Potential Applications

Among the contaminants which can enter the water supply, some of the most dangerous are genotoxins which have the ability to damage human and animal DNA and cause mutations. Sources of genotoxins include industrial effluents and possibly pharmaceuticals. Therefore the ability to monitor and alert to the presence of genotoxins is important. Wastewater treatment plants have water quality monitoring devices, but not all drinking water supplies are tested for genotoxins.

### Advantages

Current methods for detecting genotoxins in water require sampling and complicated off-site assays. Our device is portable meaning the test can be performed quickly on-site. Additionally, the probe can be used as an in-line test continuously monitoring the water quality. Because the modified bacteria are toxin specific, both toxin identification and concentration can be monitored. The probe itself is a low cost disposable card that is easily replacable.

### Patent

US patent pending

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