



## Bacterial sensing by adsorptive stripping cyclic voltammetry

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Conventional bacterial detection methods require multistep procedure and time consuming, hence adsorptive stripping cyclic voltammetry for bacterial sensing has been developed. Isoprenoid quinones are hydrophobic species found from most bacterial cells and they can behave as electroactive species which provide the voltammetric responses. Bacterial cells suspension was just applied on electrode surface and heat-desiccated before signal stripping in an aqueous medium. Type of working electrode, electrolyte medium and number of stripping cycle were investigated along with bacterial species and bacterial concentration. Indium-tin oxide and carbon paste as working electrodes provided better responses than glassy carbon electrode in phosphate buffer pH7.4 containing 0.1 M NaCl medium. Number of stripping cycle depended on the concentration of 5  $\mu\text{L}$  bacterial suspension deposited on the electrode surface. The appropriate concentration of the studied bacterial species which presented voltammetric responses were found in the range of  $10^5$ - $10^7$  cfu/mL. The results gave promising quantitation of bacterial cells and also profiling of quinones from different species of bacteria.

**Keywords:** Bacterial sensing; Adsorptive stripping cyclic voltammetry; Bacterial quinones