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Rapid Determination of Salicylic Acid at Screen Printed Electrodes

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Abstract

The pain relief capabilities of salicylate are well established and a multitude of over the counter products populate pharmacy shelves. Over application of the preparations, through accidental or deliberate misuse, can all too often result in salicylate poisoning and, in severe cases, can be fatal. A novel detection strategy involving the quantification of the quinone byproducts arising from the electrochemical oxidation of salicylate is described. The approach has been adapted for use with a disposable screen-printed electrode and found to exhibit a high sensitivity towards salicylate which is free from the electroactive interferences that compromise the direct oxidative route. A linear range of 16 to 300 μM was observed with a limit of detection of 5.6 μM . The analytical applicability of the approach was demonstrated through recovery experiments of 100 μM salicylate in urine.

Keywords

Salicylic Acid; Aspirin; Screen Printed Electrode; Sensor; Urine

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