

Research Journal of Pharmaceutical, Biological and Chemical Sciences, 2016, vol.7, N6, pages 2884-2891

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## **Amperometric detection of caffeine and paracetamol on a dual screen printed electrode modified with mixed-valence ruthenium and cobalt oxides in flow-injection analysis**

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### **Abstract**

It is found that the mixed-valence ruthenium and cobalt oxides (CoOx-RuOx) composite electrodeposited on screen printed electrode exhibits catalytic activity during caffeine and paracetamol electrooxidation. These compounds are oxidized at different potentials which provides selective voltammetric determination at simultaneous presence. A method of amperometric determination of caffeine and paracetamol on a dual electrode modified with CoOx-RuOx composite in a flow injection analysis is developed. The linear relationship between an analytical signal and analyte concentration is found in the range from  $5 \times 10^{-7}$  mol/l to  $5 \times 10^{-3}$  mol/l. Using a modified dual screen printed electrode as an amperometric detector in flow injection analysis allows to determine up to 360 samples/hour. The developed method has been tested in the analysis of some pharmaceuticals.

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### **Keywords**

Caffeine and paracetamol electrooxidation, Chemically modified electrodes, Flow injection analysis of pharmaceuticals, Mixed-valence ruthenium and cobalt oxides, Modified dual screen printed electrode