Supplementary Materials

# Electrochemical Discrimination of Salbutamol from its Excipients in Ventolin™ at Nanoporous Gold Microdisc Arrays

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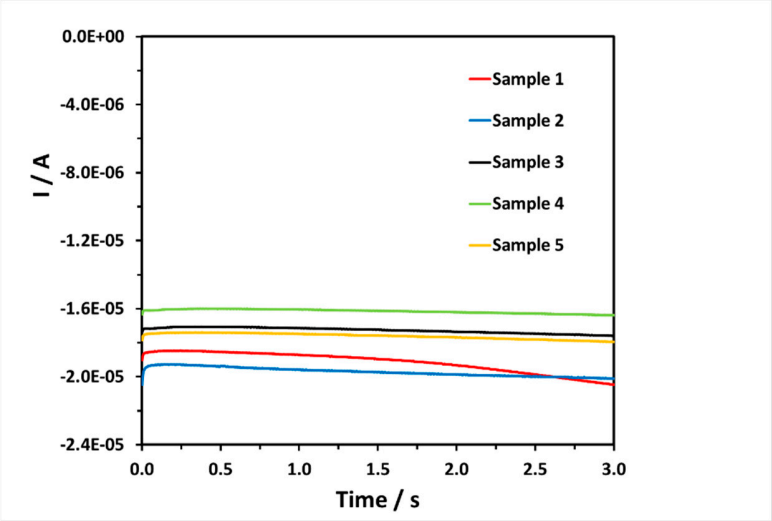


**Figure S1.** Chronoamperograms recorded at five different gold microdisc array electrodes during 3 s AuAg electrodeposition at -1.19 V vs. SCE in a solution of 100 mM $KAg(CN)_2$ and 20 mM $KAu(CN)_2$ in 250 mM $Na_2CO_3$ at pH 13 at 20 °C.

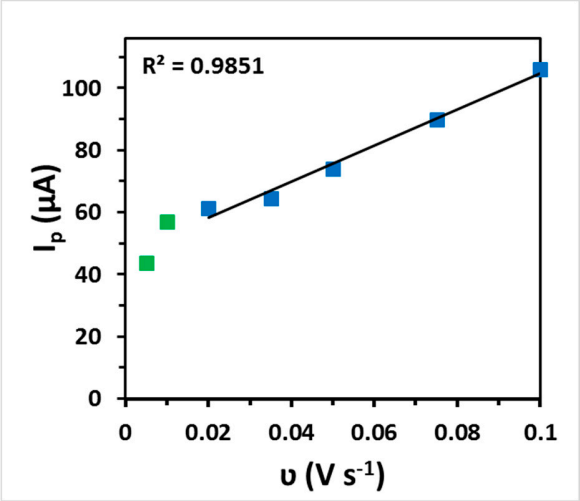


**Figure S2.** Plot of peak current versus scan rate for the peak associated with combined slbutamol oxidation and chloride adsorption in 2 mg/ml salbutamol in 0.0154 M NaCl and 0.05 mM $H_2SO_4$ solution at pH 4. The peak current was taken from the LSV recorded from -0.2 to 1.0 V vs. Pt at 10 mV $s^{-1}$ at bare gold microdisc array electrode.

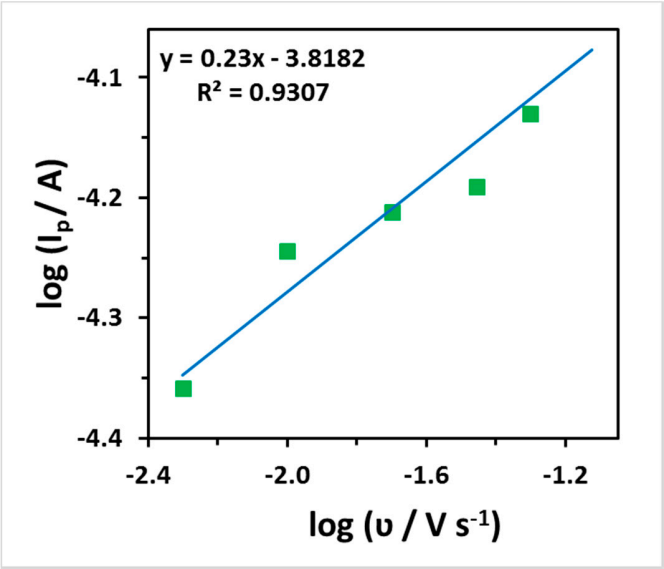


**Figure S3.** Plot of log of peak current versus log scan rate for the peak associated with combined salbutamol oxidation and chloride adsorption in 2 mg/ml salbutamol in 0.0154 M NaCl and 0.05 mM $H_2SO_4$ solution at pH 4. The peak current was taken from the LSV recorded from -0.20 to 1.0 V vs. Pt at 10 mV $s^{-1}$ at a bare gold microdisc array electrode.

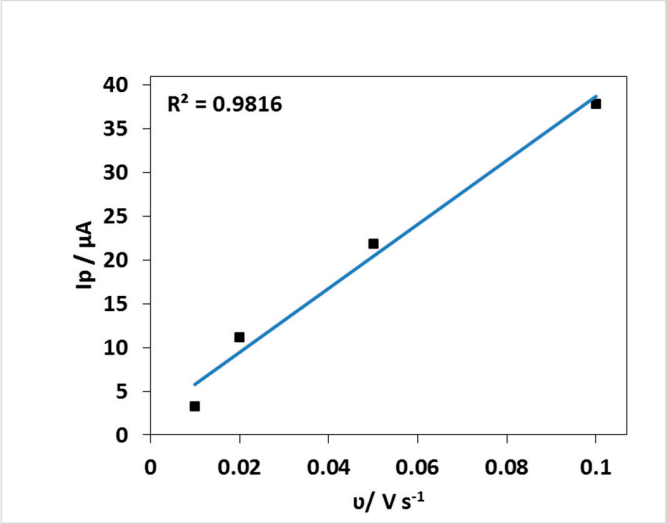


**Figure S4.** Plot of peak current versus scan rate for chloride adsorption in 2 mg/ml salbutamol in 0.0154 M NaCl and 0.05 mM $H_2SO_4$ solution at pH 4 taken from the LSV recorded from -0.20 to 1.0 V vs. Pt at 10 mV $s^{-1}$ at NPG-modified gold microdisc array electrode.

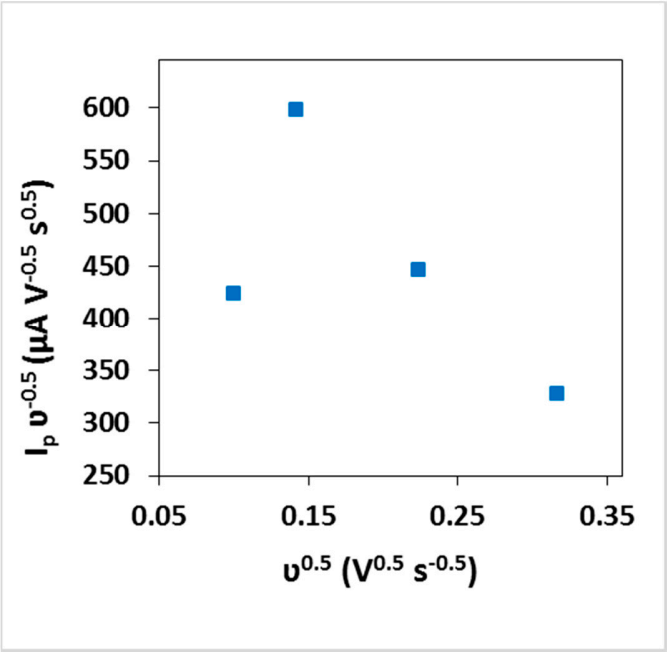


**Figure S5.** Plot of peak current function for salbutamol oxidation versus square root of scan rate recorded in 2 mg/ml salbutamol in 0.0154 M NaCl and 0.05 mM $H_2SO_4$ solution at pH 4 take from the LSV recorded from -0.20 to 1.0 V vs. Pt at 10 mV $s^{-1}$ at NPG-modified gold microdisc array electrode.

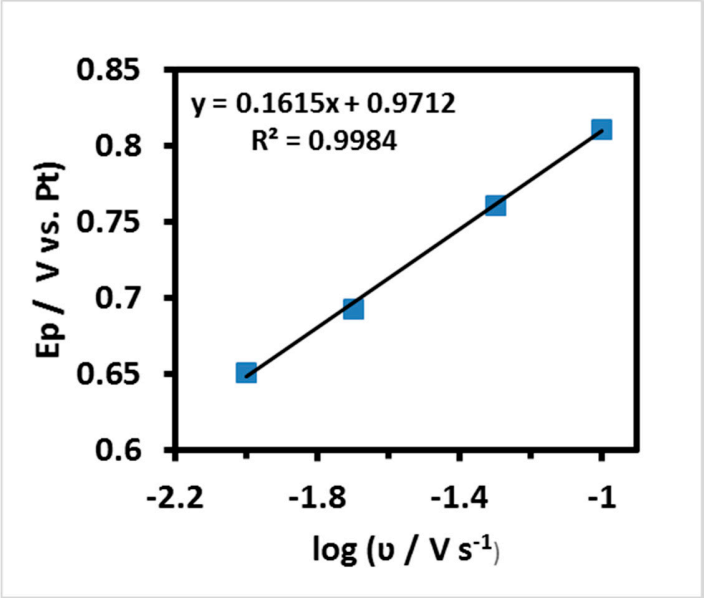


**Figure S6.** Plot of peak potential for salbutamol oxidation versus log of scan rate recorded in 2 mg/ml salbutamol in 0.0154 M NaCl and 0.05 mM $H_2SO_4$ solution at pH 4 taken from the LSV recorded from -0.20 to 1.0 V vs. Pt at 10 mV $s^{-1}$ at NPG-modified gold microdisc array electrode.

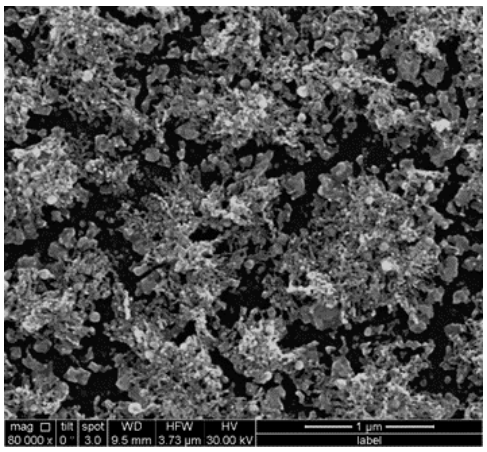

**Figure S7.** Plan view SEM image of NPG-modified microdisc array following recording of LSV from -0.20 to 1.0 V vs. Pt at 10 mV $s^{-1}$ in 1 mg/ml salbutamol in 0.0154 M chloride and 0.05 mM $H_2SO_4$.