Signal Enhancement of Hydroquinone and Catechol on Their Simultaneous Determination

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An activated glassy carbon electrode (GCE), prepared by applying a constant oxidation potential, can simultaneously determine hydroquinone (HQ) and catechol (CC). Here, we report on the modification of the electrochemical activation process of the GCE by applying a constant reduction potential preceded by the application of constant oxidation potential. The GCE activated through two-step electrochemical activation enhanced peak currents of HQ and CC compared to that activated only at a constant oxidation potential. The redox responses from the mixture of HQ and CC were easily resolved at the improved activated GCE. The peak potential separation of 110 mV was large enough for the simultaneous determination of HQ and CC. The oxidation peak currents of HQ and CC were linear over the range from 1 to 200 μ M with the detection limits (S/N= 3) of 37 and 26 nM, respectively.

Keywords: Hydroquinone, Catechol, Activated glassy carbon electrode, Signal enhancement.

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