**Fabrication of a highly selective nonenzymatic amperometric sensor for hydrogen peroxide based on nickel foam/cytochrome c modified electrode**

The development of an accurate, rapid, and low-cost monitoring technique for hydrogen peroxide (H2O2) is an important issue in biology, medicine, and food industry to assess human health risks. Several electrochemical sensors for H2O2 detection have been reported. Although these sensors have demonstrated low detection limits with good stability and selectivity, most of them have complicated preparation processes. Therefore, a simple design is needed for controlled development of electrochemical sensor for detecting H2O2 in real samples with high flexibility and low capital cost. In this study, a simple H2O2 sensor was developed based on 3D porous nickel foam (Ni foam) electrode functionalized with cytochrome c ( Cyt.c) as an electron transfer-mediating layer between active centers of the Ni foam (i.e., nickel hydroxide) and H2O2. Our findings revealed that the combination between Ni foam and Cyt.c could enhance the sensor performance in terms of sensitivity and selectivity, and allow the detection of H2O2 over a wide linear range with a detection limit of 2 x 10(-7) M and a sensitivity of 1.95 mu AmM-1. The Cyt.c/Ni foam sensor did not have potentially interfering components, such as ascorbic acid, uric acid, and dopamine; hence, is applicable for analyzing environmental samples, such as apple juice. This Cyt.c/Ni foam electrode enabled H2O2 sensing system responses with revisable, selective, and sensitive recognition of a wide range of H2O2 concentrations.