Fabrication of a Chitosan/Nitrogen Doped Carbon Sphere as Novel Electrochemical Sensor for the Detection of Rutin in Food Samples

Xingze Li

School of Materials Science and Engineering, Hubei Polytechnic University, Huangshi 435003, China
E-mail: lixingze_hb@163.com

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Flavonoid as a newly discovered nutrient, has essential physiological health effects on the human body. In this work, a very fast technique was proposed for the electrochemical analysis of rutin in food samples. Nitrogen-doped carbon nanospheres were synthesized for the surface modification of glassy carbon electrodes. The modified electrodes exhibited a sensitive response to rutin. After optimizations, this method can detect rutin in the range of 50 nM-10 μ M, with the detection limit calculated to be 15.3 nM. In addition, the proposed electrochemical has been successfully adopted for detecting rutin in juice, pickled cucumbers and tomatoes.

Keywords: Flavonoids; Electrochemical sensor; Analytical method; Food samples; Nitrogen-doped carbon sphere

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