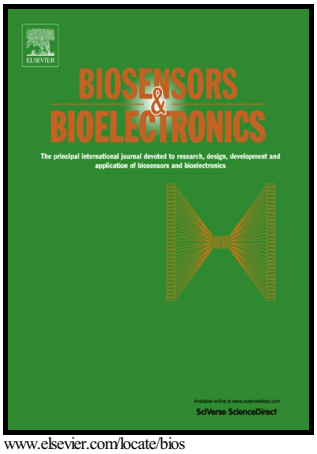

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Wenjing Zhang[a1], Liu Liu[a1], Yangguang Li[a], Dongyang Wang[a], Heng Ma[a], Hailong Ren[a], Yulin Shi[a], Yajie Han[a*], Bang-Ce Ye[a,b*]

[a]*Key Laboratory for Green Processing of Chemical Engineering of Xinjiang Bingtuan, School of Chemistry and Chemical Engineering, Shihezi University, Shihezi, 832003, China.*
[b]*State Key Laboratory of Bioreactor Engineering, East China University of Science and Technology, Shanghai, 200237, China.*

yaji1978@126.com
bcye@ecust.edu.cn

[*]Corresponding authors.

Abstract

A novel and highly selective electrochemical sensing platform ($ZnCl_2$-CF/GCE) based on combination of kiwi skin and zinc chloride nanoparticles was developed for the simultaneous detection of ascorbic acid (AA), dopamine (DA), and uric acid (UA). The constructed electrode shows a high surface area and micro-mesoporous structure. And the electrochemical behaviors of the electrode were further explored by cyclic voltammetry (CV), impedance analysis (EIS), and differential pulse voltammetry (DPV). Under the optimal conditions, the $ZnCl_2$-CF provides a high sensitivity and selective signaling in the co-existence system of AA, DA, and UA with linear response ranges of 0.05−200 μM, 2−2000 μM, and 1−2500 μM, respectively. The detection limits (S/N = 3) were calculated to be 0.02 μM, 0.16 μM, and 0.11 μM, respectively. In addition, the method has been successfully applied to determine AA, DA, and UA in real samples, which provides potential applications in further sensing study.

Keywords: *kiwifruit-derived carbon, ascorbic acid, dopamine, uric acid, simultaneous detection, biological samples*

[1] The authors contributed equally to this work.