Amperometric Sensor Based on Carbon Nanotubes and Polycations for the Determination of Vitamin C

Bingcheng Su², Yan Chen^{1,*}, Xiangli Yang¹, Juan Han¹, Hongyu Jia¹, Pei Jing¹, Yu Wang¹

¹ College of Environmental Science and Engineering, Shandong Agriculture and Engineering University, Jinan, 250100, P. R. China

² Jinan Licheng No. 2 High School, Jinan, 250000, P. R. China

*E-mail: ychen0612@163.com

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Detection of vitamin C (VC) is necessary because of its wide use in chemical, biological, and pharmaceutical engineering. Here, we describe a sensing system for the determination of VC. Instead of a bare glassy carbon electrode (GCE), a prepared multi-walled carbon nanotube-polycation-GCE was used to detect VC in samples with higher sensitivity, better repeatability, and with a lower detection limit. Under the optimal conditions, the obtained sensor presented a linear response to VC in the range of 1–100 μ M with a detection limit of 500 nM. The proposed electrode also successfully detected VC concentrations in real samples.

Keywords: Electrochemical detection; vitamin C; polycation; nanocomposite; protamine

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