The Electrochemical Redox Mechanism and Antioxidant Activity of Oleanolic Acid Based on Multi-walled Carbon Nanotube Screen-printing Electrode

Hongqiao Yang^{1,2}, Xiaoyan Ma^{1,2}, Huabin xiong^{1,2}, Jinting Gao^{1,2}, Xiaofen Li^{1,2}, Yuntao Gao^{1,2,*}, Qian Zhang

¹ The Engineering Laboratory of Polylactic Acid-Based Functional Materials of Yunnan, School of Chemistry and Environment, Yunnan Minzu University, Kunming 650500, China.

² Key Laboratory of Comprehensive Utilization of Mineral Resource in Ethnic Regions, Joint Research Centre for International Cross-border Ethnic Regions Biomass Clean Utilization in Yunnan, School of Chemistry & Environment, Yunnan Minzu University, Kunming, 650500, P. R. China.

*E-mail: ymz409@163.com

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This article emphasis on the application of the multi-walled carbon nanotubes screen printing electrodes(MWCNTs/SPEs) to reseach of plant active constituent (oleanolic acid, OA) by electrochemistry analytic procedure. The work explores the optimization of reaction conditions of OA. The stoichiometric ratio of OA on DPPH about 1:1, electrochemical redox mechanism and antioxidant activity of OA were obtained by the determination of electrochemical kinetics parameters such as electron transfer numbers (n), propons (m), electron charge coefficient (α), and standard electron transfer rate constant (k_s) are 1, 1, 0.66, 0.53 respectively based on electrochemical behavior at MWCNTs/SPEs. This method is fast, convenient, low-cost, practicable and can be used to the trace amount determination of the content of triterpenes in natural product.

Keywords: Screen-printed electrodes; Oleanolic acid; Electrochemical redox mechanism; Antioxidant activity;

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