Short Communication

A ractopamine electrochemical sensor based on a 3-dimensional macroporous copper electrode modified with a gold coating

Yan Ji¹, Yuhui Du¹, Ling Jia¹, Hong Li^{3,4,5,*}, Jiping An^{2,*} and Bin Qi^{1,*}

¹ Faculty of Chemistry, Northeast Normal University, Changchun, 130024, China

² Hospital of Stomatology, Jilin University, Changchun, 130024, China

³ Key Laboratory of Narcotics Assay and Control Technology, Ministry of Public Security

⁴ Public Security Department of Yunnan Province, Kunming, 650220, China

⁵ Institute of Forensic Science, Ministry of Public Security, P. R. China

*E-mail: qjb219@nenu.edu.cn

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Within this work, the direct electrooxidation of Rac on Cu was explored. To enhance the performance of Cu, three hard coatings were investigated: (1) a Au coating (Au@Cu) formed via an electrodeposition process; (2) a 3D-macroporous Cu (3D-Cu) formed by the electrodeposition of Cu (from CuSO₄), on a bare Cu surface with H₂ bubbles as a template; and (3) a Au-coated 3D-Cu (Au@Cu3D) prepared by an electrodeposition method. Bare Cu was used as a reference for performance comparison. Au@Cu3D was found to demonstrate the best analytical performance towards the determination of Rac. The detection limit, linear range, reproducibility, stability and real sample analysis results were used to evaluate the analytical abilities of the samples.

Keywords: Ractopamine, electrochemistry, gold coating, Cu

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