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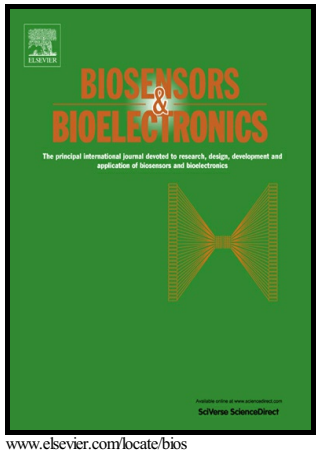
Xin Li, Yijin Yuan, Xinmeng Pan, Lizhi Zhang, Jingming Gong



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Boosted Photoelectrochemical Immunosensing of Metronidazole in Tablet Using Coral-like g-C_3N_4 Nanoarchitectures

Xin Li, Yijin Yuan, Xinmeng Pan, Lizhi Zhang, Jingming Gong*

Key Laboratory of Pesticide & Chemical Biology of Ministry of Education, College of Chemistry, Central China Normal University, Wuhan 430079, P. R. China

*Corresponding author. jmgong@mail.ccnu.edu.cn.

Abstract

A simple**,** facile and sensitive photoelectrochemical (PEC) bioassay protocol for metronidazole (MNZ) detection in common oral medicine samples has been proposed under visible-light irradiation, where novel hierarchical coral-like g-C_3N_4 nanoarchitectures (cg-C_3N_4) have been first explored as PEC sensing platform. Featured with the unique nanostructures (e.g., interlaced porous network architecture, and open boundaries), the as-formed cg-C_3N_4 nanoarchitectures not only efficiently inhibit the recombination of photogenerated electron-hole but also enable the immobilization of capture antibodies as well as the antibody-antigen binding efficiency fluently, thus amplifying the photocurrent response. This newly constructed PEC immunoassay displays excellent performance for MNZ determination with high sensitivity and selectivity. Under the optimal condition, this bioassay protocol exhibits a linear range of 0.01-100 μM with a detection limit of 0.005 μM at signal to noise