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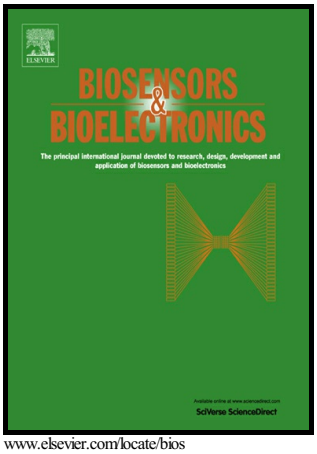

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A DNA-Stabilized Silver Nanoclusters/Graphene Oxide-Based Platform for the Sensitive Detection of DNA through Hybridization Chain Reaction

Siqi Zhang [a,b*], Kun Wang [b], Kai-Bin Li [a], Wei Shi [a], Wen-Ping Jia [a], Xiaoying Chen [a], Ting Sun [b], De-Man Han [a**]

[a] Department of Chemistry, Taizhou University, Jiaojiang, 318000, China

[b] College of Sciences, Northeastern University, Shenyang, 110819, China

zsqneu@126.com

hdm@tzc.edu.cn

[*]Corresponding author. Tel.: +86-575-85148863.

[**]Corresponding author. Tel.: +86-576-88660353.

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Abstract

A silver nanoclusters (AgNCs)/graphene oxide (GO)-based fluorescence sensor was developed for label-free DNA detection through hybridization chain reaction (HCR). A DNA sequence associated with the human immunodeficiency virus (HIV) was selected as a model target. Two DNA probes, hairpin probe 1 (H_1) and hairpin probe 2 (H_2), were partially complementary. GO was used as an adsorption material to capture the hairpin probes and a selective fluorescence quencher was used to reduce the background signal. Upon addition of $AgNO_3$ and $NaBH_4$, the AgNCs were synthesized at the terminals of the H_1 and H_2 probes. In the absence of target DNA (T_{HIV}), hybridization chain reaction (HCR) could not be triggered

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