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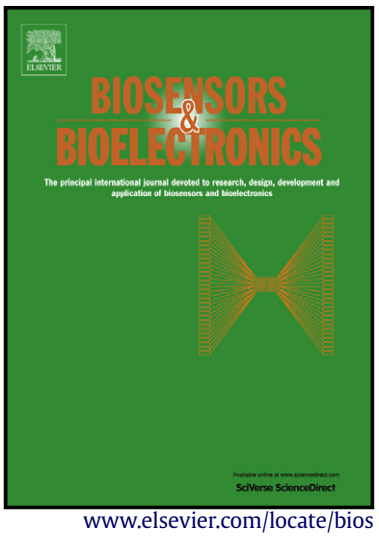

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www.elsevier.com/locate/bios

PII: S0956-5663(13)00358-8
DOI: http://dx.doi.org/10.1016/j.bios.2013.05.034
Reference: BIOS5962

To appear in: *Biosensors and Bioelectronics*

Received date: 12 April 2013
Revised date: 16 May 2013
Accepted date: 20 May 2013

Cite this article as: Yang Cai, Nan Li, De-Ming Kong, Han-Xi Shen, Fluorogenic substrate screening for G-quadruplex DNAzyme-based sensors, *Biosensors and Bioelectronics,* http://dx.doi.org/10.1016/j.bios.2013.05.034

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Fluorogenic substrate screening for G-quadruplex DNAzyme-based sensors

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Accepted manuscript

ABSTRACT:

Due to the inherent higher sensitivity of fluorescence detection than colorimetric detection, it is necessary to screen out a suitable fluorogenic substrate for G-quadruplex DNAzymes to improve the sensitivities of G-quadruplex DNAzyme-based sensors. Herein, seven candidates were tested to determine the possibilities of them as fluorogenic substrates. Among these candidates, tyramine hydrochloride gave the maximum signal-to-background ratio for the sensing systems with and without G-quadruplexes, and thus was recommended as the fluorogenic substrate for the sensors that are developed on the basis of target-triggered G-quadruplex formation or destruction. 10-acetyl-3,7-dihydroxyphenoxazine gave the maximum fluorescence signal change between the sensing systems without and with H_2O_2,

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