

Author's Accepted Manuscript

Thiazole orange as a fluorescent probe: label-free and selective detection of silver ions based on the structural change of i-motif DNA at neutral pH

Bei Hua Kang, Zhong Feng Gao, Na Li, Yan Shi, Nian Bing Li, Hong Qun Luo



PII: S0039-9140(16)30315-0
DOI: <http://dx.doi.org/10.1016/j.talanta.2016.05.006>
Reference: TAL16553

To appear in: *Talanta*

Received date: 28 January 2016
Revised date: 27 April 2016
Accepted date: 1 May 2016

Cite this article as: Bei Hua Kang, Zhong Feng Gao, Na Li, Yan Shi, Nian Bing Li and Hong Qun Luo, Thiazole orange as a fluorescent probe: label-free and selective detection of silver ions based on the structural change of i-motif DNA at neutral pH, *Talanta*, <http://dx.doi.org/10.1016/j.talanta.2016.05.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

Thiazole orange as a fluorescent probe: label-free and selective detection of silver ions based on the structural change of i-motif DNA at neutral pH

Bei Hua Kang, Zhong Feng Gao, Na Li, Yan Shi, Nian Bing Li*, Hong Qun Luo*

Key Laboratory of Eco-Environments in Three Gorges Reservoir Region (Ministry of Education), School of Chemistry and Chemical Engineering, Southwest University, Chongqing 400715, P.R. China.

*Corresponding Author. Tel: +86 23 68253237; fax: +86 23 68253237; E-mail address: linb@swu.edu.cn (NB Li); luohq@swu.edu.cn (HQ Luo).

ABSTRACT

Silver ions have been widely applied to many fields and have harmful effects on environments and human health. Herein, a label-free optical sensor for Ag^+ detection is constructed based on thiazole orange (TO) as a fluorescent probe for the recognition of i-motif DNA structure change at neutral pH. Ag^+ can fold a C-rich single stranded DNA sequence into i-motif DNA structure at neutral pH and that folding is reversible by chelation with cysteine (Cys). The DNA folding process can be indicated by the fluorescence change of TO, which is non-fluorescent in free molecule state and emits strong fluorescence after the incorporation with i-motif DNA. Thus, a rapid, sensitive, and selective method for the

Download English Version:

<https://daneshyari.com/en/article/7677828>

Download Persian Version:

<https://daneshyari.com/article/7677828>

[Daneshyari.com](https://daneshyari.com)