

Author's Accepted Manuscript

A colorimetric/fluorescent dual-mode sensor for ultra-sensitive detection of Hg^{2+}

Tao Yu, Ting-Ting Zhang, Wei Zhao, Jing-Juan Xu, Hong-Yuan Chen



PII: S0039-9140(17)30026-7
DOI: <http://dx.doi.org/10.1016/j.talanta.2017.01.026>
Reference: TAL17208

To appear in: *Talanta*

Received date: 31 October 2016
Revised date: 29 December 2016
Accepted date: 6 January 2017

Cite this article as: Tao Yu, Ting-Ting Zhang, Wei Zhao, Jing-Juan Xu and Hong-Yuan Chen, A colorimetric/fluorescent dual-mode sensor for ultra-sensitive detection of Hg^{2+} , *Talanta*, <http://dx.doi.org/10.1016/j.talanta.2017.01.026>

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 a 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.

A colorimetric/fluorescent dual-mode sensor for ultra-sensitive detection of Hg^{2+}

Tao Yu, Ting-Ting Zhang, Wei Zhao, Jing-Juan Xu* and Hong-Yuan Chen*

State Key Laboratory of Analytical Chemistry for Life Science and Collaborative Innovation Center of Chemistry for Life Sciences, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China.

* Corresponding author. Tel/Fax: +86-25-89687294; E-mail address: xujj@nju.edu.cn (J.J. Xu); weizhao@nju.edu.cn (W. Zhao)

Highlights

1. A novel colorimetric/fluorescent dual-mode sensor is presented for the detection of Hg^{2+} .
2. Hybridization chain reaction (HCR) combining multifunctional Au NPs is employed for the signal amplification.
3. Hg^{2+} down to 1.0 nM could be identified by naked eyes.
4. The fluorescence can be performed at a broader range of salt concentration.

Abstract A highly sensitive colorimetric/fluorescent dual-mode sensor based on hybridization chain reaction (HCR) combining multifunctional Au NPs is presented for the detection of Hg^{2+} in aqueous solution. In Hg^{2+} absent solution, the surface of Au NPs was covered by hairpin auxiliary DNAs and a single strand DNA (ssDNA), which prevented Au NPs from salt-induced aggregation.

Download English Version:

<https://daneshyari.com/en/article/5141461>

Download Persian Version:

<https://daneshyari.com/article/5141461>

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