

## Accepted Manuscript

Highly selective and sensitive determination of Cu<sup>2+</sup> in drink and water samples based on a 1,8-diaminonaphthalene derived fluorescent sensor

Tao Sun, Yang Li, Qingfen Niu, Tianduo Li, Yan Liu



PII: S1386-1425(18)30082-9

DOI: <https://doi.org/10.1016/j.saa.2018.01.058>

Reference: SAA 15777

To appear in: *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*

Received date: 14 December 2017

Revised date: 18 January 2018

Accepted date: 21 January 2018

Please cite this article as: Tao Sun, Yang Li, Qingfen Niu, Tianduo Li, Yan Liu , Highly selective and sensitive determination of Cu<sup>2+</sup> in drink and water samples based on a 1,8-diaminonaphthalene derived fluorescent sensor. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Saa(2017), <https://doi.org/10.1016/j.saa.2018.01.058>

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 proof before it is published in its final 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.

# Highly selective and sensitive determination of $\text{Cu}^{2+}$ in drink and water samples based on a 1,8-diaminonaphthalene derived fluorescent sensor

Tao Sun<sup>1</sup>, Yang Li<sup>1</sup>, Qingfen Niu\*, Tianduo Li, Yan Liu

*Shandong Provincial Key Laboratory of Fine Chemicals, School of Chemistry and Pharmaceutical Engineering, Qilu University of Technology, Jinan 250353, People's Republic of China*

## Abstract

A new simple and efficient fluorescent sensor **L** based on 1,8-diaminonaphthalene Schiff-base for highly sensitive and selective determination of  $\text{Cu}^{2+}$  in drink and water has been developed. This  $\text{Cu}^{2+}$ -selective detection over other tested metal ions displayed an obvious color change from blue to colorless easily detected by naked eye. The detection limit is determined to be as low as 13.2 nM and the response time is very fast within 30 s. The 1:1 binding mechanism was well confirmed by fluorescence measurements, IR analysis and DFT calculations. Importantly, this sensor **L** was employed for quick detection of  $\text{Cu}^{2+}$  in drink and environmental water samples with satisfactory results, providing a simple, rapid, reliable and feasible  $\text{Cu}^{2+}$ -sensing method.

**Keywords:** 1,8-Diaminonaphthalene; fluorescent sensor;  $\text{Cu}^{2+}$ ; drink sample; environmental sample.

\* To whom the correspondence should be addressed

E-mail: qf\_niu1216@qlu.edu.cn

Telephone: +86(531)89631760

Fax number: +86(531)89631208

<sup>1</sup> These authors contributed equally to this work.

Download English Version:

<https://daneshyari.com/en/article/7669451>

Download Persian Version:

<https://daneshyari.com/article/7669451>

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