

Accepted Manuscript

A dual-selective fluorescent probe for discriminating glutathione and homocysteine simultaneously

Jing Huang, Yanan Chen, Jianguo Qi, Xiaomin Zhou, Linqiang Niu, Zhijie Yan, Jianhong Wang, Guoxiang Zhao



PII: S1386-1425(18)30397-4
DOI: doi:[10.1016/j.saa.2018.05.006](https://doi.org/10.1016/j.saa.2018.05.006)
Reference: SAA 16029

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

Received date: 4 January 2018
Revised date: 11 April 2018
Accepted date: 2 May 2018

Please cite this article as: Jing Huang, Yanan Chen, Jianguo Qi, Xiaomin Zhou, Linqiang Niu, Zhijie Yan, Jianhong Wang, Guoxiang Zhao, A dual-selective fluorescent probe for discriminating glutathione and homocysteine simultaneously. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Saa(2017), doi:[10.1016/j.saa.2018.05.006](https://doi.org/10.1016/j.saa.2018.05.006)

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 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.

A dual-selective fluorescent probe for discriminating glutathione and homocysteine simultaneously

Jing Huang ^{a, #}, Yanan Chen ^{b, #}, Jianguo Qi ^{a, *}, Xiaomin Zhou ^a, Linqiang Niu ^a, Zhijie Yan ^a, Jianhong Wang ^{a, *}, Guoxiang Zhao ^b

^a Key Laboratory of Natural Medicine and Immuno-Engineering of Henan Province, Henan University Jimming Campus, Kaifeng 475004, Henan, China

^b Institute of Behavior and Psychology, Henan University Jimming Campus, Kaifeng 475004, Henan, China

[#] These authors contributed equally.

^{*} Corresponding author

E-mail address: qjjianguo@henu.edu.cn, jhworg@126.com

Abstract

Homocysteine (Hcy) and glutathione (GSH) play important roles in a variety of physiological and pathological processes. Abnormal levels of Hcy and GSH are related to various diseases. Fluorescent probes for detecting them with sensitive and selective are highly desirable. However, efficient discrimination of Hcy and GSH is still a challenge for their similar molecular structures and chemical properties. Herein, we report a naphthalimide and sulfonyl benzoxadiazole (SBD) based dual-selective fluorescent probe for Hcy and GSH over other amino acids. The probe exhibited weak fluorescence ($\Phi = 0.075$, in DMSO) at 490 nm and fluorescence enhancement upon addition of GSH (1-20 μM) with a detection limit of 0.8 μM . The probe also exhibited ratiometric fluorescence responses for Hcy (fluorescence at 490 nm decreased and fluorescence at 552 nm increased). The fluorescence intensity ratio (I_{552}/I_{490}) showed a good linear correlation with the Hcy concentrations in range of 3-20 μM and the detection limit was 0.1 μM . Moreover, this probe was successfully utilized for monitoring Hcy and GSH in living cells.

Download English Version:

<https://daneshyari.com/en/article/7668373>

Download Persian Version:

<https://daneshyari.com/article/7668373>

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