

Accepted Manuscript

Azo-pyrene-based fluorescent sensor of reductive cleavage of isomeric azo functional group

Han Na Joo, Binh huy Le, Young Jun Seo

PII: S0040-4039(17)30029-1
DOI: <http://dx.doi.org/10.1016/j.tetlet.2017.01.017>
Reference: TETL 48520

To appear in: *Tetrahedron Letters*

Received Date: 8 October 2016
Revised Date: 29 December 2016
Accepted Date: 6 January 2017



Please cite this article as: Na Joo, H., huy Le, B., Jun Seo, Y., Azo-pyrene-based fluorescent sensor of reductive cleavage of isomeric azo functional group, *Tetrahedron Letters* (2017), doi: <http://dx.doi.org/10.1016/j.tetlet.2017.01.017>

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.



ELSEVIER

Tetrahedron Letters

journal homepage: www.elsevier.com

Azo-pyrene-based fluorescent sensor of reductive cleavage of isomeric azo functional group

Han Na Joo^a, Binh huy Le^b, Young Jun Seo^{a,b,*}^a Department of Chemistry, Chonbuk National University, Jeonju 561-756, South Korea^b Department of Bioactive Material Sciences, Chonbuk National University, Jeonju 561-756, South Korea

ARTICLE INFO

ABSTRACT

Article history:

Received

Received in revised form

Accepted

Available online

Keywords:

Fluorophore

Azo reductive cleavage

Pyrene

Probe

Isomeric azo structure

In this study we investigated the reductive azo cleavage of an azo compound presenting a pyrene fluorophore (**Azo-py**). Because of dramatic changes in its fluorescence, **Azo-py** could be used as a monitoring system for the reductive azo cleavage. Electron transfer from the pyrene unit to the azo moiety induced fluorescence quenching; this quenched fluorescence was recovered after the reductive azo cleavage. IR and NMR spectroscopy were used to study the various structural states. The rate of reductive cleavage of the azo compound, determined through fluorescence monitoring, depended on its structural state: the cleavage of *trans*-**Azo-py** was much faster than that of the *cis*-**Azo-py**. Furthermore, the **Azo-py** fluorophore was highly sensitive to the presence of zinc, but not other metal compounds, and the pH.

2016 Elsevier Ltd. All rights reserved.

* Corresponding author. Department of Chemistry, Chonbuk National University, Jeonju 561-756, South Korea. Fax: +82-63-270-3408; Tel.: +82-63-270-3417; e-mail: yseo@jbnu.ac.kr

Download English Version:

<https://daneshyari.com/en/article/5258079>

Download Persian Version:

<https://daneshyari.com/article/5258079>

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