

Accepted Manuscript

Title: A fluorescent molecularly imprinted polymer using aptamer as a functional monomer for sensing of kanamycin

Authors: Yuanyuan Geng, Manli Guo, Jian Tan, Shuyi Huang, Youwen Tang, Lei Tan, Yong Liang



PII: S0925-4005(18)30767-6
DOI: <https://doi.org/10.1016/j.snb.2018.04.065>
Reference: SNB 24540

To appear in: *Sensors and Actuators B*

Received date: 29-1-2018
Revised date: 28-3-2018
Accepted date: 12-4-2018

Please cite this article as: Yuanyuan Geng, Manli Guo, Jian Tan, Shuyi Huang, Youwen Tang, Lei Tan, Yong Liang, A fluorescent molecularly imprinted polymer using aptamer as a functional monomer for sensing of kanamycin, *Sensors and Actuators B: Chemical* <https://doi.org/10.1016/j.snb.2018.04.065>

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 fluorescent molecularly imprinted polymer using aptamer as a functional monomer for sensing of kanamycin

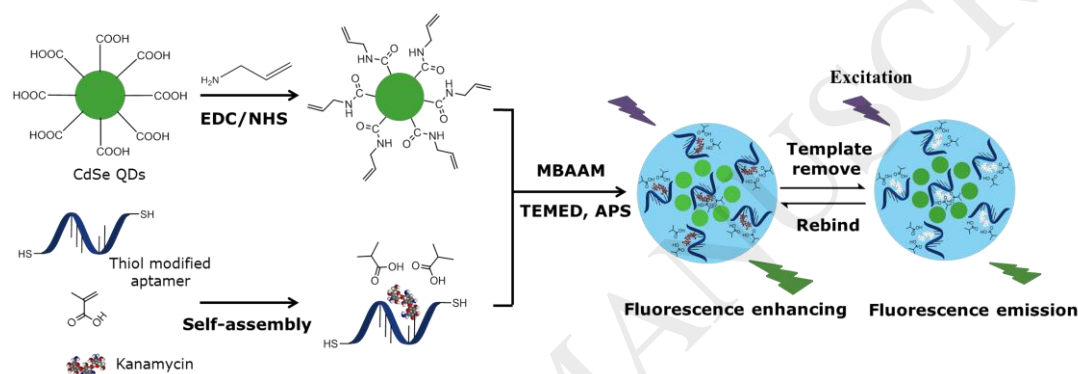
Yuanyuan Geng^a, Manli Guo^a, Jiean Tan^a, Shuyi Huang^a, Youwen Tang^{a,*}, Lei Tan^{b,*}, Yong Liang^{a,*}

^a School of Chemistry and Environment, South China Normal University, 510006, Guangzhou, China;

^b Guangzhou Center for Disease Control and Prevention, 510440, Guangzhou, China;

* Corresponding author: liangy@scnu.edu.cn, jsutanlei@gmail.com, tanglab@scnu.edu.cn; Tel.: +13-539-873-265

Graphical abstract



Highlights

- A fluorescent aptamer functionalized MIP for sensing of kanamycin.
- The MIP utilized double recognition elements of the aptamer and imprinted cavities.
- The “thiol-ene” click reaction was utilized to fix the aptamer into polymer matrix.

Abstract

This paper describes an alternative strategy for fabricating a fluorescent aptamer functionalized molecularly imprinted polymer (MIP) for highly specific sensing of kanamycin. The technique provides surface imprinting in aqueous solutions using CdSe quantum dots as supports, thiols modified aptamer and methacrylic acid as functional monomers, and kanamycin as a template. The MIP would function utilizing double recognition of the aptamer and imprinted cavities for fluorescent sensing of kanamycin. The “thiol-ene” click reaction was utilized to fix the aptamer into polymer matrix, and the click chemistry used was highly efficient under mild condition and environmentally friendly. Experimental results indicated that there was a synergistic interaction between the aptamer and MAA, which improved the recognition ability of MIP toward kanamycin.

Download English Version:

<https://daneshyari.com/en/article/7139254>

Download Persian Version:

<https://daneshyari.com/article/7139254>

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