

## Author's Accepted Manuscript

Flow-through silica: A potential matrix for fast chromatographic enantioseparation with high enantioselectivity

Xiao-jing Mao, Jing Li, Dan Liu, Ting Qiao, Liyun Ma, Xiao Sun, Li Xu, Zhi-guo Shi



PII: S0039-9140(17)31031-7  
DOI: <https://doi.org/10.1016/j.talanta.2017.09.093>  
Reference: TAL17996

To appear in: *Talanta*

Received date: 13 July 2017  
Revised date: 18 September 2017  
Accepted date: 30 September 2017

Cite this article as: Xiao-jing Mao, Jing Li, Dan Liu, Ting Qiao, Liyun Ma, Xiao Sun, Li Xu and Zhi-guo Shi, Flow-through silica: A potential matrix for fast chromatographic enantioseparation with high enantioselectivity, *Talanta*, <https://doi.org/10.1016/j.talanta.2017.09.093>

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 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.

**Flow-through silica: A potential matrix for fast chromatographic  
enantioseparation with high enantioselectivity**

Xiao-jing Mao<sup>a,1</sup>, Jing Li<sup>a,1</sup>, Dan Liu<sup>b</sup>, Ting Qiao<sup>b</sup>, Liyun Ma<sup>a</sup>, Xiao Sun<sup>a</sup>, Li Xu<sup>a,\*</sup>,  
Zhi-guo Shi<sup>b,\*</sup>

<sup>a</sup>Tongji School of Pharmacy, Huazhong University of Science and Technology,  
Wuhan 430030, China

<sup>b</sup>Department of Chemistry, Wuhan University, Wuhan 430072, China

<sup>1</sup>Equal contribution.

\*Corresponding authors. Email: xulpharm@mails.tjmu.edu.cn (L. Xu);  
shizg@whu.edu.cn (Z.-g. Shi)

**Abstract**

The demand for fast chromatographic enantioseparation aroused the hot research in stationary phase matrix. In the present study, the flow-through silica, which is characterized by hierarchical pores of through pores in several hundred nanometer range and mesopores about 20 nm, was attempted for fast enantioseparation. Thanks to the large surface area and full openness of the through pores, the flow-through silica had comparable cellulose derivative loading amount as the commercial wide-pore silica, which was impracticable for most of the core-shell particles and sub-2- $\mu\text{m}$  fully porous silica. In addition, the backpressure was about two times lower in the case of the flow-through silica of the same particle size to the commercial wide-pore silica, due to the highly porous structure of the former. Another appreciated

Download English Version:

<https://daneshyari.com/en/article/5140434>

Download Persian Version:

<https://daneshyari.com/article/5140434>

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