

## Author's Accepted Manuscript

Preparation of hybrid molecularly imprinted polymer with double- templates for rapid simultaneous purification of theophylline and chlorogenic acid in green tea

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PII: S0039-9140(16)30043-1  
DOI: <http://dx.doi.org/10.1016/j.talanta.2016.01.046>  
Reference: TAL16298

To appear in: *Talanta*

Received date: 25 October 2015  
Revised date: 21 January 2016  
Accepted date: 23 January 2016

Cite this article as: Weiyang Tang, Guizhen Li, Kyung Ho Row and Tao Zhu, Preparation of hybrid molecularly imprinted polymer with double- templates for rapid simultaneous purification of theophylline and chlorogenic acid in green tea *Talanta*, <http://dx.doi.org/10.1016/j.talanta.2016.01.046>

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1 **Preparation of hybrid molecularly imprinted polymer with double-**  
2 **templates for rapid simultaneous purification of theophylline and**  
3 **chlorogenic acid in green tea**

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8 **Abstract**

9 A novel double-templates technique was adopted for solid-phase extraction packing  
10 agent, and the obtained hybrid molecularly imprinted polymers with double-templates  
11 (theophylline and chlorogenic acid) were characterized by fourier transform infrared  
12 and field emission scanning electron microscope. The molecular recognition ability  
13 and binding capability for theophylline and chlorogenic acid of polymers was  
14 evaluated by static absorption and dynamic adsorption curves. A rapid and accurate  
15 approach was established for simultaneous purification of theophylline and  
16 chlorogenic acid in green tea by coupling hybrid molecularly imprinted solid-phase  
17 extraction with high performance liquid chromatography. With optimization of SPE  
18 procedure, a reliable analytical method was developed for highly recognition towards  
19 theophylline and chlorogenic acid in green tea with satisfactory extraction recoveries  
20 (theophylline: 96.7% and chlorogenic acid: 95.8%). The limit of detection and limit of  
21 quantity of the method were 0.01 $\mu$ g/mL and 0.03 $\mu$ g/mL for theophylline, 0.05 $\mu$ g/mL

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