

Accepted Manuscript

Title: Magnetic molecularly imprinted polymers for the selective determination of cocaine by ion mobility spectrometry

Authors: Aitor Sorribes-Soriano, Francesc Albert Esteve-Turrillas, Sergio Armenta, Ana Montoya, José Manuel Herrero-Martínez, Miguel de la Guardia



PII: S0021-9673(18)30239-5
DOI: <https://doi.org/10.1016/j.chroma.2018.02.055>
Reference: CHROMA 359234

To appear in: *Journal of Chromatography A*

Received date: 17-10-2017
Revised date: 21-2-2018
Accepted date: 26-2-2018

Please cite this article as: Aitor Sorribes-Soriano, Francesc Albert Esteve-Turrillas, Sergio Armenta, Ana Montoya, José Manuel Herrero-Martínez, Miguel de la Guardia, Magnetic molecularly imprinted polymers for the selective determination of cocaine by ion mobility spectrometry, *Journal of Chromatography A* <https://doi.org/10.1016/j.chroma.2018.02.055>

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.

Magnetic molecularly imprinted polymers for the selective determination of cocaine by ion mobility spectrometry

Aitor Sorribes-Soriano, Francesc Albert Esteve-Turrillas, Sergio Armenta*, Ana Montoya,

José Manuel Herrero-Martínez*, Miguel de la Guardia

Department of Analytical Chemistry, University of Valencia, 50th Dr. Moliner St., 46100

Burjassot, Spain

* Corresponding authors. e-mail addresses: sergio.armenta@uv.es, jose.m.herrero@uv.es

Tel.: +34 963544004; +34 963544062

Highlights

- Magnetic molecularly imprinted polymers were prepared for cocaine recognition.
- PEG and 3-(trimethoxysilyl)propyl methacrylate were used for MNPs modification.
- Cocaine were analysed in saliva samples with LOD of 4 $\mu\text{g L}^{-1}$.
- Results found were statistically comparable to those obtained by LFIA and UPLC-MS.

Abstract

Magnetic molecularly imprinted polymers (MMIPs) were prepared for cocaine recognition by bulk polymerization in the presence of magnetic nanoparticles (MNPs). Two reagents (polyethylene glycol (PEG) and 3-(trimethoxysilyl)propyl methacrylate (V)) were used for MNPs modification. MMIPs were characterized and compared in terms of loading capacity, reusability, accuracy and precision for the extraction of cocaine from saliva samples. It was observed that V-MMIPs gave higher physical stability than PEG-MMIPs. Thus, V-MMIP were used for the analysis of cocaine users saliva. The developed procedure based on ion mobility spectrometry (IMS) provided limits of detection and quantification of 4 and 14 $\mu\text{g L}^{-1}$, respectively, and recoveries in cocaine free saliva samples spiked at 80, 270 and 560 $\mu\text{g L}^{-1}$ ranging from 80 to 99

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات