

# Accepted Manuscript

Analytical Methods

Determination of artificial sweeteners in beverages with green mobile phases and high temperature liquid chromatography-tandem mass spectrometry

Edgar Y. Ordoñez, Rosario Rodil, José Benito Quintana, Rafael Cela

PII: S0308-8146(14)01180-7

DOI: <http://dx.doi.org/10.1016/j.foodchem.2014.07.132>

Reference: FOCH 16198

To appear in: *Food Chemistry*

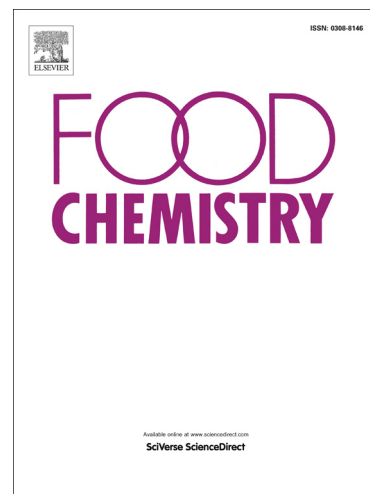
Received Date: 11 November 2013

Revised Date: 22 April 2014

Accepted Date: 29 July 2014

Please cite this article as: Ordoñez, E.Y., Rodil, R., Quintana, J.B., Cela, R., Determination of artificial sweeteners in beverages with green mobile phases and high temperature liquid chromatography-tandem mass spectrometry, *Food Chemistry* (2014), doi: <http://dx.doi.org/10.1016/j.foodchem.2014.07.132>

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.



1 **Determination of artificial sweeteners in beverages with green mobile**  
2 **phases and high temperature liquid chromatography-tandem mass**  
3 **spectrometry**

4  
5 ***Running title: Green high temperature LC-MS/MS determination of sweeteners in drinks***

6  
7 **Edgar Y. Ordoñez, Rosario Rodil, José Benito Quintana\*, Rafael Cela**

8  
9 Department of Analytical Chemistry, Nutrition and Food Sciences, IIAA - Institute for Food  
10 Analysis and Research, University of Santiago de Compostela, 15782 Santiago de Compostela, Spain

11 \* **Corresponding author:** Phone: +34881816035 and +34881814263; Fax: +34881816027; e-mail:  
12 [jb.quintana@usc.es](mailto:jb.quintana@usc.es)

13  
14 **Abstract**

15 A new analytical procedure involving the use of water and a low percentage of ethanol combined to  
16 high temperature liquid chromatography-tandem mass spectrometry has been developed for the  
17 determination of nine high-intensity sweeteners in a variety of drink samples. The method permitted  
18 the analysis in 23 min (including column reequilibration) and consuming only 0.85 mL of a green  
19 organic solvent (ethanol). This methodology provided limits of detection (after 50-fold dilution) in  
20 the 0.05-10 mg/L range, with recoveries (obtained from five different types of beverages) being in  
21 the 86-110% range and relative standard deviation values lower than 12%. Finally, the method was  
22 applied to 25 different samples purchased Spain, where acesulfame and sucralose were the most  
23 frequently detected analytes (>50% of the samples) and cyclamate was found over the legislation  
24 limit set by the European Union in a sample and at the regulation boundary in three others.

Download English Version:

<https://daneshyari.com/en/article/7595198>

Download Persian Version:

<https://daneshyari.com/article/7595198>

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