

## Accepted Manuscript

Title: OPTIMIZATION OF A MODIFIED QuEChERS METHOD FOR THE DETERMINATION OF TETRACYCLINES IN FISH MUSCLE BY UHPLC–MS/MS

Authors: Ángel Grande Martínez, David Moreno-González, Francisco J. Arrebola Liébanas, Antonia Garrido Frenich, Ana M. García-Campaña



PII: S0731-7085(18)30195-X  
DOI: <https://doi.org/10.1016/j.jpba.2018.03.029>  
Reference: PBA 11860

To appear in: *Journal of Pharmaceutical and Biomedical Analysis*

Received date: 30-1-2018  
Revised date: 12-3-2018  
Accepted date: 14-3-2018

Please cite this article as: Ángel Grande Martínez, David Moreno-González, Francisco J. Arrebola Liébanas, Antonia Garrido Frenich, Ana M. García-Campaña, OPTIMIZATION OF A MODIFIED QuEChERS METHOD FOR THE DETERMINATION OF TETRACYCLINES IN FISH MUSCLE BY UHPLC–MS/MS, *Journal of Pharmaceutical and Biomedical Analysis* <https://doi.org/10.1016/j.jpba.2018.03.029>

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.

## OPTIMIZATION OF A MODIFIED QuEChERS METHOD FOR THE DETERMINATION OF TETRACYCLINES IN FISH MUSCLE BY UHPLC-MS/MS

Ángel Grande Martínez<sup>1†</sup>, David Moreno-González<sup>2†</sup>, Francisco J. Arrebola Liébanas<sup>1</sup>, Antonia Garrido Frenich<sup>1</sup>, Ana M. García-Campaña<sup>2\*</sup>

<sup>1</sup>University of Almería, Agrifood Campus of International Excellence, Research Centre for Agricultural and Food Biotechnology (BITAL), Department of Chemistry and Physics, ceiA3, E-04120 Almería, Spain

<sup>2</sup>University of Granada, Department of Analytical Chemistry, Faculty of Sciences, Av. Fuentenueva s/n, 18071 Granada, Spain

† These authors contributed equally to this work

\* **Corresponding author:** A.M. García-Campaña (amgarcia@ugr.es)

Phone: +34-958242385 Fax: +34-958223328

### Highlights

- Tetracycline determination in fish samples by UHPLC–MS/MS in less than 4 min.
- Optimization of a modified QuEChERS procedure as sample treatment.
- Validation of the method in panga and salmon with recoveries higher than 80 %.
- LOQs were lower than 4.4  $\mu\text{g kg}^{-1}$  with RSD values lower than 18.5 %.

### Abstract

In this work a sample treatment based on a modified QuEChERS method combined with ultra-high-performance liquid chromatography–tandem mass spectrometry (UHPLC-MS/MS) was proposed to determine the residues of five common tetracyclines in fish muscle samples. The separation was achieved in less than 4 min and the analytes were detected in electrospray ionization in positive mode (ESI+) with multiple reaction monitoring mode. Parameters affecting the extraction step, such as the amount of sample and EDTA-McIlvaine buffer and extraction solvent volumes, were optimized by means of experimental design. In order to obtain the lowest matrix effect, parameters affecting the clean-up step by dispersive solid phase extraction (dSPE), were also studied. Under optimum conditions, matrix effect was lower than |15|% in all cases. Limits of quantification were lower than 4.4  $\mu\text{g kg}^{-1}$  for the compounds in the selected samples, being in compliance with the current legislation. The precision, expressed as relative

Download English Version:

<https://daneshyari.com/en/article/7626424>

Download Persian Version:

<https://daneshyari.com/article/7626424>

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