

Title: Development of a simple multi-residue determination method of 80 veterinary drugs in Oplegnathus punctatus by liquid chromatography coupled to quadrupole Orbitrap mass spectrometry

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Abstract (250-300 words)

The residues of veterinary drug in fish tissues are harmful to the public health. HRMS as a very promising tool in the area of multi-residue analytical methods and has gained wider recognition. In this article, a simple, rapid and sensitive multi-residue analytical method was developed and validated for 80 veterinary drugs in Oplegnathus punctatus using ultrahigh performance liquid chromatography-Orbitrap high resolution mass spectrometry (LC-HRMS). The analytes belong to 12 different families include benzimidazoles, β-lactams, lincosamides, macrolides, nitromidazoles, quinolones, sulfonamides and trimethoprim, tetracyclines, triphenylmethane dyes, amphenicols, nonsteroidal estrogens and steroid hormones. Particular attention was devoted to the optimization of sample extraction and UHPLC-HRMS conditions. A very simple and sufficient preparation procedure without salting-out and complex clean-up process was studied. Finally, a mixture of acetonitrile, methanol and water (3:1:1, v/v/v) which include 1% acetic acid and 10 mM ethylenediaminetetraacetic acid disodium salt 2-hydrate was selected as the extraction solvent, and the clean-up step consisted of a low temperature procedure and two times of high-speed centrifugation to deproteinize and remove lipids. The detection and quantification of all compounds were performed by ultrahigh performance liquid chromatography coupled with electrospray ionization quadrupole Orbitrap high resolution mass spectrometry in positive and negative ion mode. The developed method was validated with selectivity, linearity, recovery, precision, sensitivity, matrix effect and tested the CCα and CCβ for each target analyte according to Commission Decision 2002/657/EC and SANTE/11945/2015. The satisfactory performances were achieved mainly depended on the high efficiency of extraction solution and the excellent selectivity and sensitivity of Orbitrap. This validated method has been successfully applied on the determination of veterinary drugs in real commercial oplegnathus punctatus samples. The results indicated that the proposed method is a very simple, rapid and efficient multi-residue and multi-class analytical method for the simultaneous determination of 80 veterinary drugs in fish tissue.

Biography(100-150 words)

Mrs. Tang has completed her MA. at Tokyo University of Marine Science and Technology. She has been working as professor in Inspection and Quarantine Technical Center of Shandong Entry-Exit Inspection and Quarantine Bureau. She has published more than 10 papers in reputed journals, written 6 books, formulated 13 national standards or industry standards and applied for 4 national

invention patents about the analysis of the residues for veterinary drugs or pesticides in various food matrices.

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