

Title: LC-MS/MS Method for the Detection of Hormones: Development, Validation, Application in Various Bovine Matrices

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Abstract

A liquid chromatography-tandem mass spectrometry method was developed for the simultaneous determination of fourteen hormones belonging to different families in various bovine matrices (muscle, liver, kidney, bile and hair). Modified QuEChERS method was applied to ensure the extraction of the analytes. The additives of the mobile phase, the parameters of the mass spectrometer, as well as those of the ionization source were optimized to enhance detection sensitivity. On the other hand, the parameters influencing sample extraction including the choice of the extraction solvent and its acidification, the solvent water ratio, the use of buffer salts and the purification of the extract were also optimized. The method was validated according to the Commission Decision 2002/657/EC. Good recoveries were obtained (from 60 to 116.8 %) with coefficients of variation in terms of repeatability and reproducibility lower than 23 %. The values of the decision limit CCα and the detection capability CCβ were lower than 1 and 2 µg/kg respectively in muscle and liver for most of the analyte. Matrix effect was also evaluated. Finally, this method was applied to detect hormones in two hundred and thirty-four (234) real samples. A preliminary long-term exposure assessment was evaluated based on the obtained data.

Biography

Mr. Fadl Moussa is now in the second year of a cotutelle-PhD under a joint between the Lebanese University and University of Teramo. He has graduated with a master degree entitled "**Chemical and Microbiological Analysis of Water and Food**" by the Lebanese University- Faculty of Public health-section 1.

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