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Antibiotics and Drugs: Residue Determination

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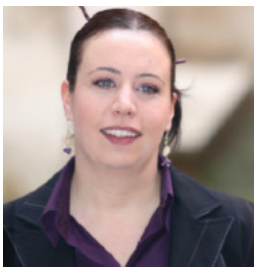
Abstract

Veterinary drugs pose a real risk to human health if their residues are allowed to enter the food chain. Parent drugs and their metabolites can occur in foodstuffs individually or as multicomponent mixtures with enhanced adverse effects. In order to protect the safety of the consumers, the European Union has established lists of forbidden substances, maximum residue limits for authorized drugs, and precise criteria to perform confirmation and screening analyses and to interpret the related results. This article deals with procedures and techniques applied to monitor pharmaceutical products of major concern, discussing advancements in the past 3 years and the future trends in the food safety field.

Keywords

Animal food products; Anthelmintics; Antibiotics; Antifungals; Anti-inflammatory drugs; Coccidiostats; Extraction procedures; Liquid chromatography; Mass spectrometry; Multiclass methods; Residue determination; Screening techniques; Veterinary drugs

Alessandra Gentili is an associate professor of Analytical Chemistry at Sapienza University of Rome. Her scientific activity essentially concerns the development of new analytical methodologies and their application to the solution of problems of food, environmental, and clinical chemistry. Two areas of main interest are the analysis of food contaminants and micronutrients.



Lucia Mainero Rocca is a postdoctoral fellow at Chemistry Department, Sapienza University of Rome. Her working area is mass spectrometry applied to occupational hygiene and chemical risk assessment; her PhD thesis was focused on drug's residues analysis in food and environmental matrices.

Fulvia Caretti is a postdoctoral fellow at the Department of Chemistry, Sapienza University of Rome. The development of LC-MS/MS methods in food matrices for the analysis of veterinary residues as well as the characterization of natural compounds (vitamins and carotenoids) belongs to her major research objectives.

Simona Bellante has earned a PhD degree in Analytical Chemistry from 'Sapienza' University of Rome. Her research has been focused on the analysis of food toxicants and on the development of LC-MS-based approaches for profiling fat-soluble micronutrients in food of interest.