Lc Ms Ms Analysis Of Three Antibiotics Used In Swine

GRACE MORENO

Liquid Chromatography - Mass Spectrometry MDPI
This volume explores state-of-the-art mass spectrometric techniques. It focuses on liquid chromatography/mass spectrometry/mass spectrometry and time-of-flight/mass spectrometry to determine emerging contaminants, such as pharmaceuticals, hormones, pesticides, surfactants and unknown natural products.
Application of LC-MS/MS in the Mycotoxins Studies Elsevier Publishing Company
In this, the post-genomic age, our knowledge of biological systems continues to expand and progress. As the research becomes more focused, so too does the data. Genomic research progresses to proteomics and brings us to a deeper understanding of the behavior and function of protein clusters. And now proteomics gives way to neuroproteomics as we beg
Handbook of LC-MS Bioanalysis Academic Press
Mycotoxins are secondary metabolites produced by the fungi of different species (mainly Aspergillus, Fusarium, and Penicillium), with toxic effects for humans and animals. These mycotoxins can contaminate food and feed. The European Union (EU) has established the maximum permitted or recommended levels for well-known mycotoxins in different foodstuffs. However, there are other mycotoxins that are not included in the regulations: the “emerging mycotoxins” (whose toxicity is still not clear), and the “modified or masked mycotoxins” (produced as a consequence of a detoxification strategy of the host plant of the fungus or during food processing). These mycotoxins could pose a risk and should also be taken into account. In order to assure consumers’ health, analytical methods for the accurate determination of mycotoxins in different food matrices and feeds are required. In this sense, liquid chromatography tandem mass spectrometry (LC–MS/MS) is a powerful tool for their unique identification and quantification. Moreover, the use of high-resolution mass spectrometry (HRMS) allows one to identify novel mycotoxins and targeted/untargeted approaches for

study. This Special Issue compiles recent applications of LC–MS/MS in mycotoxin studies, as well as the development and validation of new analytical methods for their identification and quantification in different food matrices and feed, occurrence studies, and the biomonitoring of mycotoxins and their metabolites in biological fluids.

Liquid Chromatography John Wiley & Sons

The latest edition of the authoritative reference to HPLC High-performance liquid chromatography (HPLC) is today the leading technique for chemical analysis and related applications, with an ability to separate, analyze, and/or purify virtually any sample. Snyder and Kirkland's Introduction to Modern Liquid Chromatography has long represented the premier reference to HPLC. This Third Edition, with John Dolan as added coauthor, addresses important improvements in columns and equipment, as well as major advances in our understanding of HPLC separation, our ability to solve problems that were troublesome in the past, and the application of HPLC for new kinds of samples. This carefully considered Third Edition maintains the strengths of the previous edition while significantly modifying its organization in light of recent research and experience. The text begins by introducing the reader to HPLC, its use in relation to other modern separation techniques, and its history, then leads into such specific topics as: The basis of HPLC separation and the general effects of different experimental conditions Equipment and detection The column—the "heart" of the HPLC system Reversed-phase separation, normal-phase chromatography, gradient elution, two-dimensional separation, and other techniques Computer simulation, qualitative and quantitative analysis, and method validation and quality control The separation of large molecules, including both biological and synthetic polymers Chiral separations, preparative separations, and sample preparation Systematic development of HPLC separations—new to this edition Troubleshooting tricks, techniques, and case studies for both equipment and chromatograms Designed to fulfill the needs of the full range of HPLC users, from novices to experts, Introduction to Modern Liquid Chromatography, Third Edition offers the most up-to-date, comprehensive, and accessible survey of HPLC methods and applications available.

LC-MS in Drug Analysis Royal Society of Chemistry

Liquid Chromatography: Applications, Second Edition,is a single source of authoritative information on all aspects of the practice of modern liquid chromatography. It gives those working in both academia and industry the opportunity to learn, refresh, and deepen their knowledge of the wide variety of applications in the field. In the years since the first edition was published, thousands of papers have been released on new achievements in liquid chromatography, including the development of new stationary phases, improvement of instrumentation, development of theory, and new applications in biomedicine, metabolomics, proteomics, foodomics, pharmaceuticals, and more. This second edition addresses these new developments with updated chapters from the most expert researchers in the field. - Emphasizes the integration of chromatographic methods and sample preparation - Explains how liquid chromatography is used in different industrial sectors - Covers the most interesting and valuable applications in different fields, e.g., proteomic, metabolomics, foodomics, pollutants and contaminants, and drug analysis (forensic, toxicological, pharmaceutical, biomedical) - Includes references and tables with commonly used data to facilitate research, practical work, comparison of results, and decision-making

Mass Spectrometry for the Clinical Laboratory LAP Lambert Academic Publishing

This volume comprehensively relates developments, principles, and applications of combined liquid chromatography-mass spectrometry and other techniques such as capillary electrophoresis and supercritical fluid chromatography combined with mass spectrometry. It covers historical developments, currently important interfaces and technologies, and LC-MS applications in environmental analysis, pharmaceuticals and bioanalysis, and additional fields. It offers in-depth coverage of interfaces and technologies currently important in the laboratory, especially electrospray and APCI, contains an expanded applications section, and provides over 2200 references, tables, equations, and drawings.

Ultra Performance Liquid Chromatography Mass Spectrometry Elsevier

First explaining the basic principles of liquid chromatography and mass spectrometry and then discussing the current applications and practical benefits of LC-MS, along with descriptions of the basic instrumentation, this title will prove to be the indispensable reference source for everyone wishing to use this increasingly important tandem technique. * First book to concentrate on principles of LC-MS * Explains principles of mass spectrometry and chromatography before moving on to LC-MS * Describes instrumental aspects of LC-MS * Discusses current applications of LC-MS and shows benefits of using this technique in practice

Protein and Peptide Analysis by LC-MS Elsevier

During the past decade, monolithic materials in the shape of discs, stacked layers, rolled sheets, sponges, irregular chunks, tubes, and cylinders have all been successfully demonstrated. These formats were prepared from a wide variety of materials including natural polymers such as cellulose, synthetic polymers that involved porous styrene-, methacrylate-, and acrylamide-based polymers, and inorganic materials, mainly silica. Each approach is interesting from the point of view of both preparation and application.Although the current papers and patents concerned with monolithic separation media are quite numerous, the information is scattered throughout a vast number of journals. This book therefore fills the gap in the market for a comprehensive reference book on this subject.Monolithic materials concerns all of the current formats of monolithic materials and provides an integrated view of this novel format of separation media. Since the flow pattern in monolithic devices is different from that in packed beds, the hydrodynamics of the system and mass transport differ considerably from those derived for packed columns. Therefore, this book presents contributions concerned with both flow and mass transfer in the monolithic materials. A significant proportion of the book is devoted to the applications of monolithic materials. It also provides the reader with valuable information about the sources of the specific materials, their properties, and potential applications.·Monolithic materials are currently very popular within several scientific areas such as chromatography, optics, catalysis, diagnostics, genomics, proteomics, and microfluidics.·Provides valuable information about the sources of the specific materials, their properties, and potential applications.·Chapters written by leading experts in the area.

Neuroproteomics Humana

With the aim of providing an up-to-date overview of LC-MS applications on the analysis of plant-derived compounds, papers published in the past few years involving qualitative and quantitative analysis of phytochemical constituents

and their metabolites are summarized.After briefly describing the general characteristics of natural products analysis, the most remarkable feature of LC-MS and sample preparation techniques, the present book mainly focuses on screening and characterization of phenols (including flavonoids), alkaloids, terpenoids, steroids, coumarins, lignans, and miscellaneous compounds in respective herbs and biological samples, as well as traditional Chinese medicine (TCM) prescriptions using tandem mass spectrometer. Chemical fingerprinting analysis using LC-MS is also described. Meanwhile, instrumental peculiarities and methodological details are accentuated.
Clinical Applications of Mass Spectrometry in Biomolecular Analysis John Wiley & Sons
Provides comprehensive coverage of the interpretation of LC–MS–MS mass spectra of 1300 drugs and pesticides Provides a general discussion on the fragmentation of even-electron ions (protonated and deprotonated molecules) in both positive-ion and negative-ion modes This is the reference book for the interpretation of MS–MS mass spectra of small organic molecules Covers related therapeutic classes of compounds such as drugs for cardiovascular diseases, psychotropic compounds, drugs of abuse and designer drugs, antimicrobials, among many others Covers general fragmentation rule as well as specific fragmentation pathways for many chemical functional groups Gives an introduction to MS technology, mass spectral terminology, information contained in mass spectra, and to the identification strategies used for different types of unknowns
LC/MS Applications in Drug Development CRC Press
This book is a printed edition of the Special Issue "LC-MS/MS Method for Mycotoxin Analysis" that was published in Toxins
LC-MS in Drug Bioanalysis CRC Press
Consolidates the information LC-MS bioanalytical scientists need to analyze small molecules and macromolecules The field of bioanalysis has advanced rapidly, propelled by new approaches for developing bioanalytical methods, new liquid chromatographic (LC) techniques, and new mass spectrometric (MS) instruments. Moreover, there are a host of guidelines and regulations designed to ensure the quality of bioanalytical results. Presenting the best practices, experimental protocols, and the latest understanding of regulations, this book offers a comprehensive review of LC-MS bioanalysis of small molecules and macromolecules. It not only addresses the needs of bioanalytical scientists working on routine projects, but also explores advanced and emerging technologies such as high-resolution mass spectrometry and dried blood spot microsampling. Handbook of LC-MS Bioanalysis features contributions from an international team of leading bioanalytical scientists. Their contributions reflect a review of the latest findings, practices, and regulations as well as their own firsthand analytical laboratory experience. The book thoroughly examines: Fundamentals of LC-MS bioanalysis in drug discovery, drug development, and therapeutic drug monitoring The current understanding of regulations governing LC-MS bioanalysis Best practices and detailed technical instructions for LC-MS bioanalysis method development, validation, and stability assessment of analyte(s) of interest Experimental guidelines and protocols for quantitative LC-MS bioanalysis of challenging molecules, including pro-drugs, acyl glucuronides, N-oxides, reactive compounds, and photosensitive and autooxidative compounds With its focus on current bioanalytical practice, Handbook of LC-MS Bioanalysis enables bioanalytical scientists to develop and validate robust LC-MS assay methods, all in compliance with current regulations and standards.
Applications of LC-MS in Toxicology Pharmaceutical Press
Describes and integrates the techniques of many advances in both chromatographic and mass spectrometric technologies. This book also covers various biophysical applications, such as H/D exchange for study of conformations, protein-protein and protein-metal and ligand interactions. It also describes atto-to-zepto-mole quantitation of 14C and 3H.
Advances in the Use of Liquid Chromatography Mass Spectrometry (LC-MS): Instrumentation Developments and Applications Springer Science & Business Media
A constructive evaluation of the most significant developments in liquid chromatography-mass spectrometry (LC-MS) and its uses for quantitative bioanalysis and characterization for a diverse range of disciplines, Liquid Chromatography-Mass Spectrometry, Third Edition offers a well-rounded coverage of the latest technological developments and
Phytoplankton Pigments John Wiley & Sons
Time of flight mass spectrometry identifies the elements of a compound by subjecting a sample of ions to a strong electrical field. Illuminating emerging analytical techniques in high-resolution mass spectrometry, Liquid Chromatography Time-of-Flight Mass Spectrometry shows readers how to analyze unknown and emerging contaminants—such as antibiotics, steroids, analgesics—using advanced mass spectrometry techniques. The text combines theoretical discussion with concrete examples, making it suitable for analytical chemists, environmental chemists, organic chemists, medicinal chemists, university research chemists, and graduate and post-doctorate students.
LC-MS/MS in Proteomics John Wiley & Sons
Rapid developments in tandem liquid chromatography-mass spectrometry (LC-MS/MS) have created wide interest in applications for the analysis of small molecule mixtures. MS/MS spectra can contain rich structural information, but because of the structural diversity of small molecules and different data acquisition methods, analysis algorithms and workflows frequently need to be tailored to individual research questions. This chapter shows how MATLAB can be used for LC-MS/MS-based structural characterization of small molecules. Starting with the import of raw data, ways for visualization and the creation of graphical user interfaces (GUIs) for individual applications are demonstrated. A selection of frequently used algorithms for pre-processing and data analysis is reviewed in context of their MATLAB implementation. The approaches are then tailored and applied to the analysis of iron-binding peptides (peptidic siderophores) by high-resolution LC-MS/MS. The method uses a database with siderophore structures to exploit prior knowledge about siderophore structural diversity for the interpretation of MS/MS spectra from known and new siderophores.
LC-MS Analysis of Plant-derived Bioactive Constituents Humana
Revised and Expanded Handbook Provides Comprehensive Introduction and Complete Instruction for Sample Preparation in Vital Category of Bioanalysis Following in the footsteps of the previously published Handbook of LC-MS Bioanalysis, this book is a thorough and timely guide to all important sample preparation techniques used for quantitative Liquid Chromatography–Mass Spectrometry (LC-MS) bioanalysis of small and large molecules. LC-MS bioanalysis is a key element of pharmaceutical research and development, post-approval therapeutic drug monitoring, and many other studies used in human healthcare. While advances are continually being made in key aspects of LC-MS bioanalysis such as sensitivity and throughput, the value of

research/study mentioned above is still heavily dependent on the availability of high-quality data, for which sample preparation plays the critical role. Thus, this text provides researchers in industry, academia, and regulatory agencies with detailed sample preparation techniques and step-by-step protocols on proper extraction of various analyte(s) of interest from biological samples for LC-MS quantification, in accordance with current health authority regulations and industry best practices. The three sections of the book with a total of 26 chapters cover topics that include: Current basic sample preparation techniques (e.g., protein precipitation, liquid-liquid extraction, solid-phase extraction, salting-out assisted liquid-liquid extraction, ultracentrifugation and ultrafiltration, microsampling, sample extraction via electromembranes) Sample preparation techniques for uncommon biological matrices (e.g., tissues, hair, skin, nails, bones, mononuclear cells, cerebrospinal fluid, aqueous humor) Crucial aspects of LC-MS bioanalytical method development (e.g., pre-analytical considerations, derivation strategies, stability, non-specific binding) in addition to sample preparation techniques for challenging molecules (e.g., lipids, peptides, proteins, oligonucleotides, antibody-drug conjugates) Sample Preparation in LC-MS Bioanalysis will prove a practical and highly valuable addition to the reference shelves of scientists and related professionals in a variety of fields, including pharmaceutical and biomedical research, mass spectrometry, and analytical chemistry, as well as practitioners in clinical pharmacology, toxicology, and therapeutic drug monitoring.

Current Practice of Liquid Chromatography-mass Spectrometry John Wiley & Sons

This book presents a unique collection of up-to-date UPLC-MS/MS (ultra performance liquid chromatography-tandem mass spectrometric) methods for the separation and quantitative determination of pesticides, capsaicinoids, heterocyclic amines, aflatoxin, perfluorochemicals, acrylamide, procyanidins and alkaloids, lactose content, phenolic compounds, vitamins, and aroma and flavor compounds in a wide variety of foods and food products. With contributions by experts in interdisciplinary fields, this reference offers practical information for readers in research and development, production, and routing analysis of foods and food products.

Interpretation of MS-MS Mass Spectra of Drugs and Pesticides John Wiley & Sons

Liquid-Chromatography-Mass-Spectrometry procedures have been shown to be successful when applied to drug development and analysis. LC-MS in Drug Analysis: Methods and Protocols provides detailed LC-MS/MS procedures for the analysis of several compounds of clinical significance. The first chapters provide the reader with an overview of mass spectroscopy, its place in clinical practice, its application of MS to TDM and toxicology, and the merits of LC-MS(/MS) and new sample preparation techniques. The following chapters discuss different approaches to screening for drugs of abuse and for general unknowns, as well as targeted measurement of specific analytes or classes of analytes including abused drugs, toxic compounds, and therapeutic agents. Written in the successful Methods in Molecular BiologyTM series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible protocols, and notes on troubleshooting and avoiding known pitfalls. Authoritative and easily accessible, LC-MS in Drug Analysis: Methods and Protocols seeks to serve both professionals and novices with its well-honed methodologies.

LC-MS/MS in Proteomics CRC Press

This book is the first example in presenting LC-MS strategies for the analysis of peptides and proteins with detailed information and hints about the needs and problems described from experts on-the-job. The best advantage is - for sure- the practical insight of experienced analysts into their novel protein analysis techniques. Readers starting in 'Proteomics' should be able to repeat each experiment with own equipment and own protein samples, like clean-up, direct protein analysis, after (online) digest, with modifications and others. Furthermore, the reader will learn more about strategies in protein analysis, like quantitative analysis, industrial standards, functional analysis and more.

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