[Books] Hydrophilic Interaction Chromatography A Guide For Practitioners

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Hydrophilic Interaction Chromatography-Brian W. Pack 2013-01-22 "Covers in detail HILIC retention mechanism, including background on the HILIC mode, what differences it from other HPLC modes, and retention mechanisms that can come into play"--Provided by publisher.
Comprehensive Guide to HILIC-Waters Corporation 2014-04-21 The Comprehensive Guide to HILIC: Hydrophilic Interaction Chromatography, a 72-page book, illustrates how HILIC works and how separation scientists can improve their success in separating and quantifying polar compounds in a variety of sample matrices. Looking for something else? Learn a new technique or technology with the Waters Primers Series, view other titles available here: http://www.wiley.com/go/waters
Gradient HPLC for Practitioners-Stavros Kromidas 2019-04-22 This practical guide for analytical scientists explains the use of gradients in liquid chromatography. The fundamentals of gradient separations, as well as the most common application scenarios are addressed, from LC-MS coupling to biochromatography to the separation of ionic substances. Throughout, this handy volume provides detailed hands-on information for practitioners, enabling them to use gradient separation methods reliably and efficiently.
Handbook of Advanced Chromatography /Mass Spectrometry Techniques-Michal Holcapek 2017-09-07 Handbook of Advanced Chromatography /Mass Spectrometry Techniques is a compendium of new and advanced analytical techniques that have been developed in recent years for analysis of all types of molecules in a variety of complex matrices, from foods to fuel to pharmaceuticals and more. Focusing on areas that are becoming widely used or growing rapidly, this is a comprehensive volume that describes both theoretical and practical aspects of advanced methods for analysis. Written by authors who have published the foundational works in the field, the chapters have an emphasis on lipids, but reach a broader audience by including advanced analytical techniques applied to a variety of fields. Handbook of Advanced Chromatography / Mass Spectrometry Techniques is the ideal reference for those just entering the analytical fields covered, but also for those experienced analysts who want a combination of an overview of the techniques plus specific and pragmatic details not often covered in journal reports. The authors provide, in one source, a synthesis of knowledge that is scattered across a multitude of literature articles. The combination of pragmatic hints and tips with theoretical concepts and demonstrated applications provides both breadth and depth to produce a valuable and enduring reference manual. It is well suited for advanced analytical instrumentation students as well as for analysts seeking additional knowledge or a deeper understanding of familiar techniques. Includes UHPLC, HILIC, nano-liquid chromatographic separations, two-dimensional LC-MS (LCxLC), multiple

parallel MS, 2D-GC (GCxGC) methodologies for lipids analysis, and more Contains both practical and theoretical knowledge, providing core understanding for implementing modern chromatographic and mass spectrometric techniques Presents chapters on the most popular and fastest-growing new techniques being implemented in diverse areas of research

Selection of the HPLC Method in Chemical Analysis-Serban C. Moldoveanu 2016-11-01 Selection of the HPLC Method in Chemical Analysis serves as a practical guide to users of high-performance liquid chromatography and provides criteria for method selection, development, and validation. High-performance liquid chromatography (HPLC) is the most common analytical technique currently practiced in chemistry. However, the process of finding the appropriate information for a particular analytical project requires significant effort and pre-existent knowledge in the field. Further, sorting through the wealth of published data and literature takes both time and effort away from the critical aspects of HPLC method selection. For the first time, a systematic approach for sorting through the available information and reviewing critically the up-to-date progress in HPLC for selecting a specific analysis is available in a single book. Selection of the HPLC Method in Chemical Analysis is an inclusive go-to reference for HPLC method selection, development, and validation. Addresses the various aspects of practice and instrumentation needed to obtain reliable HPLC analysis results Leads researchers to the best choice of an HPLC method from the overabundance of information existent in the field Provides criteria for HPLC method selection, development, and validation Authored by world-renowned HPLC experts who have more than 60 years of combined experience in the field

Chiral Separations-Bezhan Chankvetadze 2001-01-01 From the contents: Chiral chromatographic separations based on ligand exchange (A. Kurganov). - Chiral separations using the macrocyclic antibiotics: a review (T.J. Ward, A.B. Farris III). - High-performace liquid chromatographic and capillary electrophoretic enantioseparation of plant growth regulators and related indole conpounds using macrocyclic antibiotics as chiral selectors (Review) (F. Hui et al.). - Polysaccaride-based chiral stationary phases for high-performance liquid chromtaographic enantioseparation (Review) (E. Yashima).

Handbook of ion chromatography-Joachim Weiss 2004

Guide to Protein Purification-Murray P. Deutscher 1990 Guide to Protein Purification, designed to serve the needs of the student, experienced researcher and newcomer to the field, is a comprehensive manual that provides all the up-to-date procedures necessary for purifying, characterizing, and handling proteins and enzymes in one source. Key Features * Detailed procedures newly written for this volume * Extensive practical information * Rationale and strategies for protein and enzyme purification * Personal perspectives on enzyme purification by eminent researchers Among the Topics Covered * General methods for handling proteins and enzymes * Extraction, subcellular fractionation, and solubilization procedures * Comprehensive purification techniques * Specialized purification procedures * Protein characterization * Immunological procedures * Computer analysis of protein structure

Column Handbook for Size Exclusion Chromatography-Chi-san Wu 1999-03-19 Column Handbook for Size Exclusion Chromatography is the first comprehensive reference to provide everything one needs to know about commercial analytical and preparative columns for size exclusion and gel filtration chromatography (SEC and GFC). SEC is now widely used as a quality assurance method in the polymer industry (both synthetic and biopolymers) to determine molecular weight and molecular weight distribution. The Handbook contains contributions from every column manufacturer around the world and from many experienced column users. It covers the technology, characterization, application, evaluation, maintenance, and quality control of analytical and preparative columns for SEC and GFC. Also included are columns for two closely related techniques, hydrodynamic chromatography and high osmotic pressure chromatography. Key Features * Evaluate and select columns with confidence for specific applications * Optimize separations and improve the ruggedness of analytical methods * Extend the service time of a column * Establish a quality-control program to ensure consistency in column performance * Avoid the expense of column damage or purchases that do not give the expected results

HPLC for Pharmaceutical Scientists-Yuri V. Kazakevich 2007-02-16 HPLC for Pharmaceutical Scientists is an excellent book for both novice and experienced pharmaceutical chemists who regularly use HPLC as an analytical tool to solve challenging problems in the pharmaceutical industry. It provides a unified approach to HPLC with an equal and balanced treatment of the theory and practice of HPLC in the pharmaceutical industry. In-depth discussion of retention processes, modern HPLC separation theory, properties of stationary phases and columns are well blended with the practical aspects of fast and effective method development and method validation. Practical and pragmatic approaches and actual examples of effective development of selective and rugged HPLC

methods from a physico-chemical point of view are provided. This book elucidates the role of HPLC throughout the entire drug development process from drug candidate inception to marketed drug product and gives detailed specifics of HPLC application in each stage of drug development. The latest advancements and trends in hyphenated and specialized HPLC techniques (LC-MS, LC-NMR, Preparative HPLC, High temperature HPLC, high pressure liquid chromatography) are also discussed.

UHPLC in Life Sciences-Davy Guillarme 2012 Since its commercial introduction in 2004, UHPLC (Ultra-High Performance Liquid Chromatography) has begun to replace conventional HPLC in academia and industry and interest in this technique continues to grow. Both the increases in speed and resolution make this an attractive method; particularly to the life sciences and more than 1500 papers have been written on this strongly-evolving topic to date. This book provides a solid background on how to work with UHPLC and its application to the life sciences. The first part of the book covers the basics of this approach and the specifics of a UHPLC system, providing the reader with a solid background to working properly with such a system. The second part examines the application of UHPLC to the life sciences, with a focus on drug analysis strategies. UHPLC-MS, a key technique in pharmaceutical and toxicological analyses, is also examined in detail. The editors (Davy Guillarme and Jean-Luc Veuthey) were some of the earliest adopters of UHPLC and have published and lectured extensively on this topic. Between them they have brought together an excellent team of contributors from Europe and the United States, presenting a wealth of expertise and knowledge. This book is an essential handbook for anyone wishing to adopt an UHPLC system in either an academic or industrial setting and will benefit postgraduate students and experienced workers alike.

Handbook of Analysis of Oligonucleotides and Related Products-Jose V. Bonilla 2011-02-23 Oligonucleotides represent one of the most significant pharmaceutical breakthroughs in recent years, showing great promise as diagnostic and therapeutic agents for malignant tumors, cardiovascular disease, diabetes, viral infections, and many other degenerative disorders. The Handbook of Analysis of Oligonucleotides and Related Products is an essential reference manual on the practical application of modern and emerging analytical techniques for the analysis of this unique class of compounds. A strong collaboration among thirty leading analytical scientists from around the world, the book provides readers with a comprehensive overview of the most commonly used analytical techniques and their advantages and limitations in assuring the identity, purity, quality, and strength of an oligonucleotide intended for therapeutic use. Topics discussed include: Strategies for enzymatic or chemical degradation of chemically modified oligonucleotides toward mass spectrometric sequencing Purity analysis by chromatographic or electrophoretic methods, including RP-HPLC, AX-HPLC, HILIC, SEC, and CGE Characterization of sequence-related impurities in oligonucleotides by mass spectrometry and chromatography Structure elucidation by spectroscopic methods (IR, NMR, MS) as well as base composition and thermal melt analysis (Tm) Approaches for the accurate determination of molar extinction coefficient of oligonucleotides Accurate determination of assay values Assessment of the overall quality of oligonucleotides, including microbial analysis and determination of residual solvents and heavy metals Strategies for determining the chemical stability of oligonucleotides The use of hybridization techniques for supporting pharmacokinetics and drug metabolism studies in preclinical and clinical development Guidance for the presentation of relevant analytical information towards meeting current regulatory expectations for oligonucleotide therapeutics This resource provides a practical guide for applying state-of-the-art analytical techniques in research, development, and manufacturing settings.

Chromatography-Elsa Lundanes 2013-08-16 Finally a book on chromatography which is easy to grasp for undergraduates and technicians; covers the area in sufficient depth while still being concise. The book includes all recent technology advances and has core textbook features further improving the learning experience. This book is the perfect introduction into a methodology which is the underlying principle of the vast majority of separation methods worldwide. Everyone working in a lab environment must be familiar with the basis of these technologies and Tyge Greibrokk, Elsa Lundanes and Leon Reubsaet succeed in delivering a text which is easy to read for undergraduates and laboratory technicians, and covers the area in sufficient depth while still being concise. The book includes all recent technology advances and has core textbook features further improving the learning experience. Importantly, the text does not only cover all major modern chromatography technology (thin layer, gas, high pressure liquid, and supercritical fluid chromatography) but also related methods, in particular electrophoretic technologies.

Green Chromatographic Techniques-Dr. Inamuddin 2013-11-12 This book presents a unified outlook on counter-current, ion size exclusion, supercritical fluids,

high-performance thin layers, and gas and size exclusion chromatographic techniques used for the separation and purification of organic and inorganic analytes. It also describes a number of green techniques, green sample preparation methods and optimization of solvent consumption in the chromatographic analysis of organic and inorganic analytes. This book offers a valuable resource not only for learners, but also for more experienced chromatographers, conveying a deeper understanding of green chromatographic techniques, green solvents and preparation methods.

Therapeutic Oligonucleotides-Jens Kurreck 2008 This book provides a compelling overall update on current status of RNA interference

Preparative Chromatography Techniques-K. Hostettmann 2013-03-14 Over the past few years, increasing attention has been paid to the search for bioactive compounds from natural sources. The success of plant-derived products such as paclitaxel (Taxol) in tumor therapy or artemisinin in the treatment of malaria has provided the impetus for the introduction of numerous research programmes, especially in Industry. A great deal of effort is being expended in the generation of novel lead molecules of vegetable, marine and microbial origin by the use of high throughput screening protocols. When interesting hits are found, it is essen tial to have methods available for the rapid isolation of target compounds. For this reason, both industry and academia need efficient preparative chromatographic separation techniques and experience in their application. Purified natural products are required for complete spectro scopic identification and full characterization of new compo unds, for biological testing and for the supply of pharmaceuti cals, standards, and starting materials for synthetic work. Obtaining pure products from an extract can be a very long, te dious and expensive undertaking, involving many steps. Sometimes only minute amounts of the desired compounds are at hand and these entities may be labile. Thus it is an advantage to have access to as many different methods as possible in order to aid the isolation process. Although a certain amount of trial and error may be involved, nowadays there is the possibility of devising suitable rapid separation schemes by a judicious choice of the different techniques available.

A Laboratory Guide to Glycoconjugate Analysis-P. Jackson 2012-12-06 18. 2 Principle of FACE/Gel Retardation Assay . . . . . 349 18. 3 Labelling of Oligosaccharides with ANTS . . . . . 350 18. 4 Screening of Carbohydrate Ligands for Proteins . . . . . 352 18. 5 Measurement of Binding Constant for the Interaction Between Protein and ANTS-Labelled Carbohydrate . . . . . 355 18. 6 Measurement of Binding Constant for the Interaction Between Protein and Native Carbohydrate . . . . . 357 References . . . . . 360 ~ The Application of Capillary Affinity Electrophoresis to the Analysis _ of Carbohydrate-Protein Interactions . . . . . 361 19. 1 Introduction . . . . . 361 19. 2 Principle of CAE . . . . . 363 19. 3 Determination of Association Constants . . . . . 364 19. 4 Technical Procedures . . . . . 366 General considerations . . . . . 366 19. 5 Limitations of the Technique . . . . . 370 19. 6 Application of CAE to the Analysis of Carbohydrate-Protein Interactions . . . . . 371 19. 7 Conclusions . . . . . 375 References . . . . . 377 20. 1 Introduction . . . . . 379 Definitions . . . . . 380 20. 2 Technical Procedures . . . . . 381 20. 3 Sample Detection and Sample Recovery . . . . . 389 Autoradiography and staining . . . . . 389 Sample detection by blotting . . . . . 389 Semipreparative ACE . . . . . 390 20. 4 Analysis of Data . . . . . 391 Measuring sample mobilities - calculating a retardation coefficient . . . . . 391 Graphical analysis of data . . . . . 392 Interpreting ACE patterns . . . . . 393 Reverse ACE . . . . . 395 20. 5 Summary . . . . . 397 Acknowledgements . . . . . 398 References . . . . . 398 Subject Index . . . . . 399 XII List of Contributors Nebojsa Avdalovic John T. Gallagher Dionex Corporation Cancer Research Campaign Department of Medical Oncology 445 Lakeside Drive University of Manchester Sunnyvale, CA 94086 Christie CRC Research Centre Klaus Biemann Wilmslow

Road Department of Chemistry Manchester M20 4BX Massachusetts Institute of Technology UK Cambridge, MA 02139-4307 USA Geoffrey R.
Introduction to Modern Liquid Chromatography-Lloyd R. Snyder 2011-09-20 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.
Microbial Metabolomics-Edward E.K. Baidoo 2018-11-13 This detailed volume includes protocols that represent the breadth of microbial metabolomics approaches to both large-scale and small-scale experiments with intention of highlighting techniques that can be used for applications ranging from environmental microbiology to human disease. Utilizing mass spectrometry as their primary measurement tool, the chapters explore microbial metabolomics, metabolism and microbial physiology, metabolite sample preparation, current analytical techniques used to profile primary and secondary metabolites and lipids, as well as establishing data analysis workflows for targeted metabolomics, untargeted metabolomics, analysis of metabolic fluxes, and genome-scale models. Written for the highly successful Methods in Molecular Biology series, chapters include introduction to their respective topics, lists of the necessary materials and reagents, step-by-step readily reproducible protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, Microbial Metabolomics: Methods and Protocols serves as an ideal reference for both novice and advanced users and can be adapted to similar analytical platforms or customized to suit the needs of the researcher.
Essentials in Modern HPLC Separations-Serban C. Moldoveanu 2012-09-21 This book discusses in a systematic manner the role of separation in HPLC, the types and characteristics of stationary phases and of mobile phases used in this technique, as well as other factors influencing the separation. The selection process of stationary and mobile phase for a specific separation is described as related to the physico-chemical characteristics of the molecules to be separated and of their matrix. All these subjects are discussed from the point of view of the new developments in HPLC. The book also includes a part presenting the practice of modern HPLC as necessary for applications, particularly related to the analysis of pharmaceutical and biological samples, food and beverages, environmental samples, etc. Gives a clear presentation of notions and conceptsDiscusses key parameters in HPLC separationIncludes modern developments in HPLCDescribes interrelation between various HPLC features (solvent pressure, separation, detection)Includes a large number of references.
Micellar Liquid Chromatography-Alain Berthod 2000-03-30 Micellar Liquid Chromatography reviews the use of surfactant solutions at or above the critical micelle concentration as mobile phases in liquid chromatography. It employs a computer-assisted optimization methodology and integrates micellar liquid chromatography (MLC) with other chromatographic and electrophoretic techniques using surfactants. It also includes the MICHROM software package on CD-ROM to facilitate the application of equations and optimize efficiency of MLC systems.
Liquid Chromatography-Salvatore Fanali 2013-01-08 A single source of authoritative information on all aspects of the practice of modern liquid chromatography suitable for advanced students and professionals working in a laboratory or managerial capacity Chapters written by authoritative and visionary experts in the field provide an overview and focused treatment of a single topic Comprehensive coverage of modern liquid chromatography from theory, to methods, to

selected applications Thorough selected references and tables with commonly used data to facilitate research, practical work, comparison of results, and decision making Extensive original tables and figures, placing recent research developments into a general context Worked examples, intuitive explanations, and clear figures reinforce learning

Purification Tools for Monoclonal Antibodies-Pete Gagnon 1996 Purification Tools for Monoclonal is an essential book for professionals, educators and advanced students in the field of Biotechnology. It is based on experience gained from purification process development, scale-up, and manufacture of more than 250 monoclonal-based diagnostic and therapeutic products. Ten chapters provide in-depth coverage of major separation mechanisms, process strengths, weaknesses and method development; all fully integrated with the special performance, economic and validation requirements associated with monoclonals. Covered methods include precipitation with inorganic salts, polyethylene glycol, electrolyte depletion, caprylic acid, ethacridine, chromatographic purification by size exclusion, ion exchange, hydroxyapatite, hydrophobic interaction, immobilized metal affinity, hydrophilic interaction, euglobulin adsorption, thiophilic adsorption, protein A, protein G, lectin affinity, and more. 88 figures, 29 tables.

HPLC Columns-Uwe D. Neue 1997-07-28 An in-depth guide to HPLC column technology High-performance liquid chromatography and its derivative techniques have become the dominant analytical separation tools in the pharmaceutical, chemical, and food industries; environmental laboratories; and therapeutic drug monitoring. Although the column is the heart of the HPLC instrument and essential to its success, until now, no book has focused on the theory and practice of column technology. HPLC Columns provides thorough, state-of-the-art coverage of HPLC column technology for the practicing technician and academician alike. Along with a comprehensive discussion of the chemical and physical processes of the HPLC column, it includes fundamental principles, separation mechanisms and available technologies, column selection criteria, and special techniques. Special features include: * Comprehensive overview of state-of-the-art HPLC column technology * Explanation of the underlying principles of HPLC columns * Methods for selecting columns * Practical advice on using and applying columns, including examples * Section by M. Zoubair El Fallah on methods development * Special techniques, including preparative chromatography, continuous chromatography, and the simulated moving bed * Troubleshooting section HPLC Columns helps laboratory practitioners make better choices in column selection, methods development, and troubleshooting: it is also an excellent textbook for graduate-level courses and HPLC short courses.

Liquid Chromatography-Salvatore Fanali 2017-06-23 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

Milk Proteins-Isabel Gigli 2016-09-07 Milk proteins have nutritional value and extraordinary biological properties. Research over the last decades has provided new insight into the structure and the function of milk bioactive peptides. Some of these peptides are delivered directly into milk, and some are encrypted in major proteins such as caseins and lactoglobulins. These peptides have antimicrobial functions modulating the gut microflora. Even when milk is undisputedly the first food for mammals, milk proteins sometimes can be a health threat, either because of allergic reaction or because of toxicity. In this regard, in vitro studies showed donkey's casein and major whey proteins to be more digestible than cows' for human consumption. In this book, readers will find updated research on the major milk proteins' structure, bioactive peptides, milk protein allergy, therapeutic strategies, and chemical markers that can be used to detect cow milk intolerance in infants. This book provides the most current scientific information on milk proteins, from structure to biological properties. It will be of great benefit for those interested in milk production, milk chemistry, and human health.

Tandem Mass Spectrometry-Ana Varela Coelho 2013-05-29 Tandem Mass Spectrometry - Molecular Characterization presents a comprehensive coverage of

theory, instrumentation and description of experimental strategies and MS/MS data interpretation for the structural characterization of relevant molecular compounds. The areas covered include the analysis of drugs, metabolites, carbohydrates and protein post-translational modifications. The book series in Tandem Mass Spectrometry serves multiple groups of audiences; professional (academic and industry), graduate students and general readers interested in the use of modern mass spectrometry in solving critical questions of chemical and biological sciences.

Modern HPLC for Practicing Scientists-Michael W. Dong 2016-04-06 A comprehesive yet concise guide to Modern HPLC Written for practitioners by a practitioner, Modern HPLC for Practicing Scientists is a concise text which presents the most important High-Performance Liquid Chromatography (HPLC) fundamentals, applications, and developments. It describes basic theory and terminology for the novice, and reviews relevant concepts, best practices, and modern trends for the experienced practitioner. Moreover, the book serves well as an updated reference guide for busy laboratory analysts and researchers. Topics covered include: HPLC operation Method development Maintenance and troubleshooting Modern trends in HPLC such as quick-turnaround and "greener" methods Regulatory aspects While broad in scope, this book focuses particularly on reversed-phase HPLC, the most common separation mode, and on applications for the pharmaceutical industry, the largest user segment. Accessible to both novice and intermedate HPLC users, information is delivered in a straightforward manner illustrated with an abundance of diagrams, chromatograms, tables, and case studies, and supported with selected key references and Web resources. With intuitive explanations and clear figures, Modern HPLC for Practicing Scientists is an essential resource for practitioners of all levels who need to understand and utilize this versatile analytical technology.

Handbook of LC-MS Bioanalysis-Wenkui Li 2013-09-03 Consolidates the information LC-MS bioanalytical scientistsneed to analyze small molecules and macromolecules The field of bioanalysis has advanced rapidly, propelled by newapproaches for developing bioanalytical methods, new liquidchromatographic (LC) techniques, and new mass spectrometric (MS)instruments. Moreover, there are a host of guidelines andregulations designed to ensure the quality of bioanalyticalresults. Presenting the best practices, experimental protocols, and thelatest understanding of regulations, this book offers acomprehensive review of LC-MS bioanalysis of small molecules andmacromolecules. It not only addresses the needs of bioanalyticalscientists working on routine projects, but also explores advancedand emerging technologies such as high-resolution mass spectrometryand dried blood spot microsampling. Handbook of LC-MS Bioanalysis features contributions froman international team of leading bioanalytical scientists. Theircontributions reflect a review of the latest findings, practices,and regulations as well as their own firsthand analyticallaboratory experience. The book thoroughly examines: Fundamentals of LC-MS bioanalysis in drug discovery, drugdevelopment, and therapeutic drug monitoring The current understanding of regulations governing LC-MSbioanalysis Best practices and detailed technical instructions for LC-MSbioanalysis method development, validation, and stabilityassessment of analyte(s) of interest Experimental guidelines and protocols for quantitative LC-MSbioanalysis of challenging molecules, including pro-drugs, acylglucuronides, N-oxides, reactive compounds, and photosensitive andautooxidative compounds With its focus on current bioanalytical practice, Handbook ofLC-MS Bioanalysis enables bioanalytical scientists to developand validate robust LC-MS assay methods, all in compliance withcurrent regulations and standards.

Quantitative Structure-Roman Kaliszan 1987-10-14 The use of computers in numerical characterization of molecular structures has given chemists fundamentally new information on chemical structures, leading to major developments in physical, analytical, and medicinal chemistry. This book, written by a pioneer in the field, extends and updates research on quantitative structure retention relationships (QSRR) by consolidating and critically reviewing the extensive literature on the subject while providing basic theoretical and practical information required in all investigations involving chromatography, analytical chemistry, biochemistry, and pharmaceutical research. Coverage includes detailed discussions of the general theories and mechanisms of chromatographic separations, prediction of retention coefficients, statistical techniques and formal requirements of QSRR studies, specific applications of chromatographic data, and much more. Also provides several carefully selected figures and tables plus extensive bibliographies.

Handbook of Thermoplastics, Second Edition-Olagoke Olabisi 2016-02-03 This new edition of the bestselling Handbook of Thermoplastics incorporates recent developments and advances in thermoplastics with regard to materials development, processing, properties, and applications. With contributions from 65 internationally recognized authorities in the field, the second edition features new and updated discussions of several topics, including: Polymer nanocomposites Laser processing of thermoplastic composites Bioplastics Natural fiber thermoplastic composites Materials selection Design and application

Additives for thermoplastics Recycling of thermoplastics Regulatory and legislative issues related to health, safety, and the environment The book also discusses state-of-the-art techniques in science and technology as well as environmental assessment with regard to the impact of thermoplastics. Each chapter is written in a review format that covers: Historical development and commercialization Polymerization and process technologies Structural and phase characteristics in relation to use properties The effects of additives on properties and applications Blends, alloys, copolymers, and composites derived from thermoplastics Applications Giving thorough coverage of the most recent trends in research and practice, the Handbook of Thermoplastics, Second Edition is an indispensable resource for experienced and practicing professionals as well as upper-level undergraduate and graduate students in a wide range of disciplines and industries.
Guide to Protein Purification-Richard R Burgess 2009-11-03 The 2e of this classic Guide to Protein Purification provides a complete update to existing methods in the field, reflecting the enormous advances made in the last two decades. In particular, proteomics, mass spectrometry, and DNA technology have revolutionized the field since the first edition’s publication but through all of the advancements, the purification of proteins is still an indispensable first step in understanding their function. This volume examines the most reliable, robust methods for researchers in biochemistry, molecular and cell biology, genetics, pharmacology and biotechnology and sets a standard for best practices in the field. It relates how these traditional and new cutting-edge methods connect to the explosive advancements in the field. This "Guide to" gives imminently practical advice to avoid costly mistakes in choosing a method and brings in perspective from the premier researchers while presents a comprehensive overview of the field today. Gathers top global authors from industry, medicine, and research fields across a wide variety of disciplines, including biochemistry, genetics, oncology, pharmacology, dermatology and immunology Assembles chapters on both common and less common relevant techniques Provides robust methods as well as an analysis of the advancements in the field that, for an individual investigator, can be a demanding and time-consuming process
Multidimensional Chromatography-Luigi Mondello 2002-02-15 Concentrates on the broad field of multidimensional chromatography and its applications in various areas, including pharmaceutical, industrial, environmental, biological and petroleum. Presents information for using multidimensional chromatography in the analytical laboratory. Contains invaluable information put together from the experience and research activities of the authors including Keith Bartle - a pioneer in multidimensional chromatography. First book to discuss all multidimensional techniques Covers a subject area that is part of the exploding field of hypenated techniques Includes a general introduction to all areas of the subject followed by applications
Comprehensive Chromatography in Combination with Mass Spectrometry-Luigi Mondello 2011-08-24 This book provides a detailed description of various multidimensional chromatographic separation techniques. The editor first provides an introduction to the area and then dives right into the various complex separation techniques. While still not used routinely comprehensive chromatography techniques will help acquaint the readers with the fundamentals and possible benefits of multi-dimensional separations coupled with mass spectrometry. The topics include a wide range of material that will appease all interested in either entering the field of multidimensional chromatography and those looking to gain a better understanding of the topic.
Protein Chromatography: Methods and Protocols-Dermot Walls 2018-10-26 This second edition expands on the previous edition with new chapters that are suitable for newcomers, as well as more detailed chapters that cover protein stability and storage, avoiding proteolysis during chromatography, protein quantitation methods including immuno-qPCR, and the challenges that scale-up of production poses to the investigator. Many of the chapters also discuss generation and purification of recombinant proteins, recombinant antibody production, and the tagging of proteins as a means to enhance their solubility and simplify their purification on an individual scale or in high-throughput systems. This book also provides readers with chapters that describe not just the more commonly used methods, but also recently developed approaches such as proteomic/mass spectrometric techniques and Lectin-based affinity chromatography. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Cutting-edge and thorough, Protein Chromatography: Methods and Protocols, Second Edition is a valuable resource for anyone who is interested in the field of protein chromatography.
Software-Assisted Method Development in High Performance Liquid Chromatography-Szabolcs Fekete 2019-01-01 This handbook gives a general overview of the possibilities in recent developments in chromatographic retention modeling. As a result of the latest developments in modeling software, several new

features are now accessible, opening a new level in HPLC method development. Many of these current possibilities in software assisted liquid chromatographic method modeling for analytical purposes are presented. Several modes of chromatography, including Reversed-Phase Liquid Chromatography (RPLC), Ion Exchange Chromatography (IEX), Hydrophobic Interaction Chromatography (HIC), and Hydrophilic Interaction Liquid Chromatography (HILIC) are explained in detail. For all these chromatographic modes, the most important variables for tuning retention and selectivity are exposed. Beside the industrial and practical benefits of retention modeling, the possibilities in teaching and education are also illustrated. Finally, numerous representative industrial examples are shown, to highlight the benefits, time and cost savings offered by state-of-the-art software assisted HPLC method development.

Proteomics in Biology- 2017-01-19 Proteomics in Biology Part A, the latest volume in the Methods in Enzymology series, continues the legacy of this premier serial with quality chapters authored by leaders in the field, and a focus on proteomics for this updated volume. Continues the legacy of this premier serial with quality chapters that focus on proteomics Contains contributions from leading authorities

HPLC of Peptides and Proteins-Marie-Isabel Aguilar 2004 Hands-on experts from academia and industry comprehensively describe how to successfully perform all the critical HPLC techniques needed for the analysis of peptides and proteins. The methods range from commonly used techniques to those for capillary to large-scale preparative isolation. The authors have also presented a number of specific applications as case studies to illustrate the analytical approaches to a particular separation or assay challenge, with examples drawn from contemporary fields in biochemistry and biotechnology. Follow step-by-step instructions that ensure experimental success Develop your own separation and analytical protocols for peptide and protein analysis.

Mass Spectrometry Handbook-Mike S. Lee 2012-04-16 Due to its enormous sensitivity and ease of use, mass spectrometry has grown into the analytical tool of choice in most industries and areas of research. This unique reference provides an extensive library of methods used in mass spectrometry, covering applications of mass spectrometry in fields as diverse as drug discovery, environmental science, forensic science, clinical analysis, polymers, oil composition, doping, cellular research, semiconductor, ceramics, metals and alloys, and homeland security. The book provides the reader with a protocol for the technique described (including sampling methods) and explains why to use a particular method and not others. Essential for MS specialists working in industrial, environmental, and clinical fields.

HPLC and UHPLC for Practicing Scientists-Michael W. Dong 2019-08-06 A concise yet comprehensive reference guide on HPLC/UHPLC that focuses on its fundamentals, latest developments, and best practices in the pharmaceutical and biotechnology industries Written for practitioners by an expert practitioner, this new edition of HPLC and UHPLC for Practicing Scientists adds numerous updates to its coverage of high-performance liquid chromatography, including comprehensive information on UHPLC (ultra-high-pressure liquid chromatography) and the continuing migration of HPLC to UHPLC, the modern standard platform. In addition to introducing readers to HPLC’s fundamentals, applications, and developments, the book describes basic theory and terminology for the novice, and reviews relevant concepts, best practices, and modern trends for the experienced practitioner. HPLC and UHPLC for Practicing Scientists, Second Edition offers three new chapters. One is a standalone chapter on UHPLC, covering concepts, benefits, practices, and potential issues. Another examines liquid chromatography/mass spectrometry (LC/MS). The third reviews at the analysis of recombinant biologics, particularly monoclonal antibodies (mAbs), used as therapeutics. While all chapters are revised in the new edition, five chapters are essentially rewritten (HPLC columns, instrumentation, pharmaceutical analysis, method development, and regulatory aspects). The book also includes problem and answer sections at the end of each chapter. Overviews fundamentals of HPLC to UHPLC, including theories, columns, and instruments with an abundance of tables, figures, and key references Features brand new chapters on UHPLC, LC/MS, and analysis of recombinant biologics Presents updated information on the best practices in method development, validation, operation, troubleshooting, and maintaining regulatory compliance for both HPLC and UHPLC Contains major revisions to all chapters of the first edition and substantial rewrites of chapters on HPLC columns, instrumentation, pharmaceutical analysis, method development, and regulatory aspects Includes end-of-chapter quizzes as assessment and learning aids Offers a reference guide to graduate students and practicing scientists in pharmaceutical, biotechnology, and other industries Filled with intuitive explanations, case studies, and clear figures, HPLC and UHPLC for Practicing Scientists, Second Edition is an essential resource for practitioners of all levels who need to understand and utilize this versatile analytical technology. It will be a great benefit to every busy laboratory analyst and researcher.

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