Biacore T100 Manual

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Handbook of Metalloproteins Springer
A proven collection of readily reproducible techniques for studying amyloid proteins and their involvement in the etiology, pathogenesis, diagnosis, and therapy of amyloid diseases. The contributors provide methods for the preparation of amyloid and its precursors (oligomers and protofibrils), in vitro assays and analytical techniques for their study, and cell culture models and assays for the production of amyloid proteins. Additional chapters present readily reproducible techniques for amyloid extraction from tissue, its detection in vitro and in vivo, as well as nontransgenic methods for developing amyloid mouse models. The protocols follow the successful Methods in Molecular BiologyTM series format, each offering step-by-step laboratory instructions, an introduction outlining the principle behind the technique, lists of the necessary equipment and reagents, and tips on troubleshooting and avoiding known pitfalls.
Xenotransplantation Wiley
Innovative and forward-looking, this volume focuses on recent achievements in this rapidly progressing field and looks at future potential for development. The first part provides a basic understanding of the factors governing protein-ligand interactions, followed by a comparison of key experimental methods (calorimetry, surface plasmon resonance, NMR) used in generating interaction data. The second half of the book is devoted to insilico methods of modeling and predicting molecular recognition and binding, ranging from first principles-based to approximate ones. Here, as elsewhere in the book, emphasis is placed on novel approaches and recent improvements to established methods. The final part looks at unresolved challenges, and the strategies to address them. With the content relevant for all drug classes and therapeutic fields, this is an inspiring and often-consulted guide to the complexity of protein-ligand interaction modeling and analysis for both novices and experts.
Protein-Ligand Interactions Garland Science
This book is a comprehensive text covering the major aspects of the cell and molecular biology of the facilitative glucose transporter family. The text reviews the biology and

function of each family member, covers structure-function studies, the regulation of glucose transport by insulin and the consequence of diabetes and insulin resistance, discusses aspects of cellular signalling which control glucose transport, reviews the control of expression and function of GLUT2 in liver and pancreatic beta-cells, and reviews the effects of nutrients on the control of sugar transporter expression.

Handbook of Affinity Chromatography John Wiley & Sons

High-throughputomics' projects such as genome sequencing, structural genomics and proteomics mean that there is no shortage of information on proteins. But the more information we have, the harder it is to make sense of it, to know where to start, and to identify the important results. This book is a clear, up to date and authoritative account of

Handbook of Immunoassay Technologies Humana Press

Although antiviral drugs have been successfully developed for some viral diseases, there remains a clear, unmet medical need to develop novel antiviral agents for the control and management of many viruses that currently have no or limited treatment options as well as a need to overcome the limitations associated with the existing antiviral drugs, such as adverse effects and emergence of drug-resistant mutations. The second edition of Antiviral Methods and Protocols features: All chapters are new and written by experts in the field, reflecting the major recent technical advances in antiviral research and discovery. This edition focuses on many important human viruses, such as human immunodeficiency virus type 1 (HIV-1), hepatitis viruses (hepatitis B and C viruses), herpes viruses, human respiratory syncytial virus (RSV), and influenza virus, while also featuring some important emerging viruses, such as dengue virus, West Nile virus, and chikungunya virus. As a volume in the highly successful Methods in Molecular Biology series, 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. Comprehensive and cutting-edge, Antiviral Methods and Protocols, Second Edition will serve as an excellent laboratory reference for pharmaceutical and academic biologists, medicinal chemists, and pharmacologists as well as for virologists in the field of antiviral research and drug discovery.

Surface Plasmon Resonance Based Sensors Springer Science & Business Media

The last two decades have seen a phenomenal growth of the field of genetic or biochemical engineering and have witnessed the development and ultimately marketing of a variety of products-typically through the manipulation and growth of different types of microorganisms, followed by the recovery and purification of the associated products. The engineers and biotechnologists who are involved in the full-scale process design of such facilities must be familiar with the variety of unit operations and equipment and the applicable regulatory requirements. This book describes current commercial practice and will be useful to those engineers working in this field in the design, construction and operation of pharmaceutical and biotechnology plants. It will be of help to the chemical or pharmaceutical engineer who is developing a plant design and who faces issues such as: Should the process be batch or continuous or a combination of batch and continuous? How should the optimum process design be developed? Should one employ a new revolutionary separation which could be potentially difficult to validate or use accepted technology which involves less risk? Should the process be run with ingredients formulated from water for injection, deionized water, or even filtered tap water? Should any of the separations be run in cold rooms or in glycol jacketed lines to minimize microbial growth where sterilization is not possible? Should the process equipment and lines be designed to be sterilized in-place, cleaned-in-place,

or should every piece be broken down, cleaned and autoclaved after every turn?

Tau oligomers Springer Science & Business Media

This volume explores detailed methods and experimental protocols evaluating the effect of a compound or a mixture of compounds on the action of enzymes that are significant targets in pharmaceuticals. Consisting of three sections, the book delves into recent biocomputing and bioinformatics protocols, state-of-the art modern biophysical, electrophoretic, and chromatographic methods and high-throughput screening approaches, as well as detailed protocols and examples of the inhibition analysis and evaluation of selected enzymes. Written for the highly successful Methods in Molecular Biology series, 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. Authoritative and cutting-edge, Targeting Enzymes for Pharmaceutical Development: Methods and Protocols serves as a vital reference for academics and industry professionals working on expanding our understanding of the wide range of important enzyme targets.

Label-Free Technologies For Drug Discovery Springer Science & Business Media

Advances in Peptide and Peptidomimetic Design Inspiring Basic Science and Drug Discovery is a book dedicated to Prof. Victor J. Hruby on the occasion of his 80th birthday. This book includes twenty contributions from authors representing diverse multidisciplinary fields of scientific expertise, and is focused on the extraordinary potential of peptides and peptidomimetics as a surging therapeutic modality and as tools for basic research and technology development.

Handbook of Surface Plasmon Resonance Springer Science & Business Media

This volume looks at the different spectroscopic and biophysical methods used by researchers to study the structure and folding of RNA, and to follow their interactions with proteins. The chapters in this book cover topics such as single-molecule spectroscopy of multiple RNA species; surface plasmon resonance, MS or microcalorimetry for investigating molecular interactions with RNA; FTIR, SAXS, SANS and SRCD spectroscopies to analyze RNA structure; use of fluorescent nucleotides to map RNA-binding sites on proteins surfaces or CryoEM; and much more. 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 comprehensive, RNA Spectroscopy: Methods and Protocols is a valuable resource for anyone interested in learning more about this developing field.

The microbial sulfur cycle Humana Press

Antibody–drug conjugates (ADCs) represent one of the most promising and exciting areas of anticancer drug discovery. Five ADCs are now approved in the US and EU [i.e., ado-trastuzumab emtansine (KadcylaTM), brentuximab vedotin (AdcetrisTM), inotuzumab ozogamicin (BesponsaTM), gemtuzumab ozogamicin (MylotargTM) and moxetumomab pasudotox-tdfk (Lumoxiti®)] and over 70 others are in various stages of clinical development,

with impressive interim results being reported for many. The technology is based on the concept of delivering a cytotoxic payload selectively to cancer cells by attaching it to an antibody targeted to antigens on the cell surfaces. This approach has several advantages including the ability to select patients as likely responders based on the presence of antigen on the surface of their cancer cells and a wider therapeutic index, given that ADC targeting enables a more efficient delivery of cytotoxic agents to cancer cells than can be achieved by conventional chemotherapy, thus minimising systemic toxicity. Although there are many examples of antibodies that have been developed for this purpose, along with numerous linker technologies used to attach the cytotoxic agent to the antibody, there is presently a relatively small number of payload molecules in clinical use. The purpose of this book is to describe the variety of payloads used to date, along with a discussion of their advantages and disadvantages and to provide information on novel payloads at the research stage that may be used clinically in the future.

How Proteins Work Humana Press

Sulfur is the tenth most abundant element in the universe and the sixth most abundant element in microbial biomass. By virtue of its chemical properties, particularly the wide range of stable redox states, sulfur plays a critical role in central biochemistry as a structural element, redox center, and carbon carrier. In addition, redox reactions involving reduced and oxidized inorganic sulfur compounds can be utilized by microbes for the generation and conservation of biochemical energy. Microbial transformation of both inorganic and organic sulfur compounds has had a profound effect on the properties of the biosphere and continues to affect geochemistry today. For these reasons, we present here a collection of articles from the leading edge of the field of sulfur microbiology, focusing on reactions and compounds of geochemical significance.

Genetic Engineering News Elsevier

This book provides practical information on a whole set of protein experiments for advanced structural biology, such as X-ray crystallography, NMR, electron microscopy, advanced mass spectroscopy, and surface plasmon resonance, as well as a wide variety of expression systems including eukaryotic and in vitro expression. In the past decade, structural genomics studies have pushed forward the development of automated methods in the field of structural biology, however there is an increasing need for the structural analysis of difficult targets, such as large protein complexes and membrane proteins, which are hard to achieve using conventional automated methods, and require knowledge that goes beyond standard protein chemistry protocols. To address these problems and to help researchers develop novel methods, this volume provides examples of the development of new protein investigation methods and their theoretical background. This book particularly appeals to graduate students, postdoctoral researchers, young investigators wishing to gain a better understanding of the theory behind experiments, and those seeking further advanced, practical structural biology methods.

Lipidomics Humana Press

Intended for advanced readers, this is a review of all relevant techniques for structure analysis in one handy volume. As such, it provides the latest knowledge on spectroscopic and related techniques for chemical structure analysis, such as NMR, optical spectroscopy,

mass spectrometry and X-ray crystallography, including the scope and limitation of each method. As a result, readers not only become acquainted with the techniques, but also the advantages of the synergy between them. This enables them to choose the correct analytical method for each problem, saving both time and resources. Special emphasis is placed on NMR and its application to absolute configuration determination and the analysis of molecular interactions. Adopting a practical point of view, the author team from academia and industry guarantees both solid methodology and applications essential for structure determination, equipping experts as well as newcomers with the tools to solve any structural problem.

Glycoinformatics John Wiley & Sons

"it is a pleasure just to read this handsome and carefully produced work" Angewandte Chemie 2002 "...the Handbook of Metalloproteins is highly recommended as a resource for bioinorganic chemistry. It will have lasting value for researchers in the field..." The Alchemist - Chemweb In recent years, the analysis and classification of metalloproteins at the interface between chemistry and biology has accelerated. Many developments and initiatives have taken place and this two-volume handbook provides a comprehensive, yet focussed, collection of 105 major metalloproteins. Content is presented in both a large format and full colour and covers the most relevant transition metals such as Iron, Nickel, Copper, Cobalt, Molybdenum, Manganese Tungsten and Vanadium. This is the first Handbook of Metalloproteins ever published and is comprised of articles written by renowned experts in the field. It draws together contributions from over two hundred internationally renowned researchers that include: Douglas Rees and Charles Stout as well as Nobel Prize winner Robert Huber. Each contribution is presented in a similar format and shows a ribbon plot of the overall 3D Structure on their first page, a representation of the metal active site and numerous other figures and tables underpinning the remarks. Comparative information is provided on different proteins and every entry has been extensively referenced to current literature. * First comprehensive handbook to cover the major metalloproteins * Presents structural and functional data in an organised manner * Incorporates full-colour representation of molecular structures throughout * Unifies information from molecular biology, enzymology, spectroscopy, biochemistry, chemistry, biophysics, macromolecular crystallography and structural biology * Includes comprehensive sections that cover: Functional Class, Occurrence, Amino Acid Sequence Information, Protein Production, Purification and Molecular Characterisation, Metal Content and Cofactors, Activity Test, Spectroscopy, 3D Structure, Functional Aspects.

Antiviral Methods and Protocols Cambridge University Press

This third edition volume expands on the previous editions with more detailed research on the characterization of antibody antigen interactions between different users with different requirements. The chapters in this book are divided into four parts: Part One looks at the entire native antigen and covers traditional structural biology techniques such as nuclear magnetic resonance and x-ray crystallography. Part Two talks about protein fragments derived from antigens, and discusses binding regions within antigen sequence using bacterial surface display and ELISA, for example. Part Three describes the use of surface plasmon resonance spectroscopy and biolayer interferometry, and Part Four highlights methods used to identify new antigens and assess antibody cross-reactivity. 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. Thorough and cutting-edge, Epitope Mapping Protocols, Third Edition is a valuable resource for anyone interested in furthering their research in this expanding field.

Molecular Diagnosis of Infectious Diseases Humana

Over the past two decades the benefits of label-free biosensor analysis have begun to make an impact in the market, and systems are beginning to be used as mainstream research tools in many drug discovery laboratories. Label-Free Technologies For Drug Discovery summarises the latest and emerging developments in label-free detection systems, their underlying technology principles and end-user case studies that reveal the power and limitations of label-free in all areas of drug discovery. Label-free technologies discussed include SPR, NMR, high-throughput mass spectrometry, resonant waveguide plate-based screening, transmitted-light imaging, isothermal titration calorimetry, optical and impedance cell-based assays and other biophysical methods. The technologies are discussed in relation to their use as screening technologies, high-content technologies, hit finding and hit validation strategies, mode of action and ADME/T, access to difficult target classes, cell-based receptor/ligand interactions particularly orphan receptors, and antibody and small molecule affinity and kinetic analysis. Label-Free Technologies For Drug Discovery is an essential guide to this emerging class of tools for researchers in drug discovery and development, particularly high-throughput screening and compound profiling teams, medicinal chemists, structural biologists, assay developers, ADME/T specialists, and others interested in biomolecular interaction analysis.

Tip Enhancement Springer

Surface plasmon resonance (SPR) plays a dominant role in real-time interaction sensing of biomolecular binding events. This book focuses on a total system description including optics, fluidics and sensor surfaces. It covers all commercial SPR systems in the market. It is the first of its kind and fills a gap in the technical literature as no other handbook on SPR is currently available. The final chapter discussed new trends and a vision is given for future developments and needs of the SPR market. This excellent handbook provides comprehensive information with easy to use, stand-alone chapters and will be of great use to anyone one working with or affiliated to the technology.

Evaluation of Enzyme Inhibitors in Drug Discovery Humana Press

This essential handbook guides investigators in the theory, applications, and practical use of affinity chromatography in a variety of fields including biotechnology, biochemistry, molecular biology, analytical chemistry, proteomics, pharmaceutical science, environmental analysis, and clinical chemistry. The Handbook of Affinity Chromatograph

Flow Cytometry Humana Press

Since the introduction of recombinant human growth hormone and insulin a quarter century ago, protein therapeutics has greatly broadened the ho- zon of health care. Many patients suffering with life-threatening diseases or chronic dysfunctions, which were medically untreatable not long ago, can attest to the wonder these drugs have achieved. Although the ?rst generation of p- tein therapeutics was produced in recombinant Escherichia coli, most recent products use mammalian cells as production hosts. Not long after the ?rst p- duction of recombinant proteins in E. coli, it was realized that the complex tasks of most post-translational modi?cations on proteins could only be ef?ciently carried out in mammalian cells. In the 1990s, we witnessed a rapid expansion of mammalian-cell-derived protein therapeutics, chie?y antibodies. In fact, it has been nearly a decade since the market value of mammalian-cell-derived protein therapeutics surpassed that of those produced from E. coli. A common characteristic of recent antibody products

is the relatively large dose required for effective therapy, demanding larger quantities for the treatment of a given disease. This, coupled with the broadening repertoire of protein drugs, has rapidly expanded the quantity needed for clinical applications. The increasing demand for protein therapeutics has not been met exclusively by construction of new manufacturing plants and increasing total volume capacity. More - portantly the productivity of cell culture processes has been driven upward by an order of magnitude in the past decade.

Epitope Mapping Protocols Humana Press

This is a comprehensive treatment of the field of SPR sensors, in three parts. Part I introduces principles of surface plasmon resonance bio-sensors, electromagnetic theory of surface plasmons, theory of SPR sensors and molecular interactions at sensor surfaces. Part II examines the development of SPR sensor instrumentation and functionalization methods. Part III reviews applications of SPR biosensors in the study of molecules, and in environmental monitoring, food safety and medical diagnostics.