

An Introduction To Medicinal Chemistry

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The Handbook of Medicinal Chemistry

This work bridges the compartmentalized undergraduate organic and biochemistry and biology subjects to the pharmacology and the clinical areas a modern pharmacy practice requires. The changes and constantly increasing responsibilities of today's pharmacist have dictated a restructuring of the pharmacy curriculum, including individual course content. This book reflects and addresses these developments. This is a well-written work that covers most major areas of pharmaceutical research. The text is presented in a logical and concise fashion being divided into chapters based upon therapeutic topic. This makes the work very useful for teaching a course in medicinal chemistry since therapeutic areas can be separately covered without having to make use of the entire book which overall contains a tremendous amount of information. This book is a significant contribution to understanding what medicinal chemistry is and how this science is used to develop new therapeutic agents.

An Introduction to Medicinal Chemistry

For many people, taking some form of medication is part of everyday life, whether for mild or severe illness, acute or chronic disease, to target infection or to relieve pain. However for most it remains a mystery as to what happens once the drug has been taken into the body: how do the drugs actually work? Furthermore, by what processes are new drugs discovered and brought to market? An Introduction to Medicinal Chemistry, sixth edition, provides an accessible and comprehensive account of this fascinating multidisciplinary field. Assuming little prior knowledge, the text is ideal for those studying the subject for the first time. In addition to

covering the key principles of drug design and drug action, the text also discusses important current topics in medicinal chemistry. The subject is brought to life throughout by engaging case studies highlighting particular classes of drugs, and the stories behind their discovery and development.

Medicinal Organometallic Chemistry

Presenting both a panoramic introduction to the essential disciplines of drug discovery for novice medicinal chemists as well as a useful reference for veteran drug hunters, this book summarizes the state-of-the-art of medicinal chemistry. It covers key drug targets including enzymes, receptors, and ion channels, and hit and lead discovery. The book then surveys a drug's pharmacokinetics and toxicity, with a solid chapter covering fundamental bioisosteres as a guide to structure-activity relationship investigations.

New Synthetic Technologies in Medicinal Chemistry

Stressing strategic and technological solutions to medicinal chemistry challenges, this book presents methods and practices for optimizing the chemical aspects of drug discovery. Chapters discuss benefits, challenges, case studies, and industry perspectives for improving drug discovery programs with respect to quality and costs.

- Focuses on small molecules and their critical role in medicinal chemistry, reviewing chemical and economic advantages, challenges, and trends in the field from industry perspectives
- Discusses novel approaches and key topics, like screening collection enhancement, risk sharing, HTS triage, new lead finding approaches, diversity-oriented synthesis, peptidomimetics, natural products, and high throughput medicinal chemistry approaches
- Explains how to reduce design-make-test cycle times by integrating medicinal chemistry, physical chemistry, and ADME profiling techniques
- Includes descriptive case studies, examples, and applications to illustrate new technologies and provide step-by-step explanations to enable them in a laboratory setting

Introduction to Medicinal Chemistry

The book provides a current overview and comprehensive compilation for medicinal chemists that discusses the effects of aiming for multiple targets on the entire drug development process. The result is a broad survey of current and future strategies for drug selectivity in medicinal chemistry with theoretical but also practical aspects. Different strategies are presented and evaluated, such as various design approaches, merged multiple ligands, discovery technologies and a broad range of successful examples of unselective drugs taken from all major disease areas. With its wide-ranging view of an emerging new paradigm in drug development, this handbook is of prime importance for every medicinal and pharmaceutical chemist.

Exam Prep Flash Cards for An Introduction to Medicinal Chemistry

Essentials of Inorganic Chemistry

One strategy to expedite the discovery of new drugs, a process that is somewhat slow and serendipitous, is the identification and use of privileged scaffolds. This book covers the history of the discovery and use of privileged scaffolds and addresses the various classes of these important molecular fragments. The first of the benzodiazepines, a class of drugs that is powerful for treating anxiety, may not have been discovered had it not been for a chance experiment on the contents of a discarded flask found during a lab clean-up. Some years later, scientists discovered that benzodiazepine derivatives were also effective in treating other diseases. This class of molecules was the first to be described as privileged in the sense that it is especially effective at altering the course of disease. Other privileged molecular structures have since been discovered, and since these compounds are so effective at interacting with numerous classes of proteins, they may be an effective starting point to look for new drugs against the supposedly "undruggable" proteins. Following introductory chapters presenting an overview, a historical perspective and the theoretical background and findings, main chapters describe the structure of privileged structures in turn and discuss major drug classes associated with them and their syntheses. This book provides comprehensive coverage of the subject through chapters contributed by expert authors from both academia and industry and will be an excellent reference source for medicinal chemists of a range of disciplines and experiences.

Lipophilicity in Drug Action and Toxicology

Essentials of Organic Chemistry is an accessible introduction to the subject for students of Pharmacy, Medicinal Chemistry and Biological Chemistry. Designed to provide a thorough grounding in fundamental chemical principles, the book focuses on key elements of organic chemistry and carefully chosen material is illustrated with the extensive use of pharmaceutical and biochemical examples. In order to establish links and similarities the book places prominence on principles and deductive reasoning with cross-referencing. This informal text also places the main emphasis on understanding and predicting reactivity rather than synthetic methodology as well as utilising a mechanism based layout and featuring annotated schemes to reduce the need for textual explanations. * tailored specifically to the needs of students of Pharmacy, Medical Chemistry and Biological Chemistry * numerous pharmaceutical and biochemical examples * mechanism based layout * focus on principles and deductive reasoning This will be an invaluable reference for students of Pharmacy, Medicinal and Biological Chemistry.

Textbook of Medicinal Chemistry Vol I - E-Book

In keeping with the outstanding importance of lipophilicity in biosciences, this volume examines all its facets in more than twenty contributions from leading experts. It offers a thorough and highly topical survey of this rapidly developing field of research. Color plates demonstrating structural aspects, a vast number of references, and the straightforward presentation of the material make this volume an invaluable tool for all researchers involved in drug design or in the investigation of drug action.

Lead Optimization for Medicinal Chemists

Synthesis of Medicinal Agents from Plants highlights the importance of synthesizing medicinal agents from plants and outlines methods for performing it effectively. Beginning with an introduction to the significance of medicinal plants, the book goes on to provide a historical overview of drug synthesis before exploring how this can be used to successfully replicate and adapt the active agents from natural sources. Chapters then explore the medicinal properties of a number of important plants, before concluding with a discussion of the future of drugs from medicinal plants. Illustrated with real-world examples, it is a practical resource for researchers in this field. In an age of rapid environmental destruction, hundreds of medicinal plants are at risk of extinction from overexploitation and deforestation, limiting the natural resources available for active agent extraction, thereby threatening the discovery of future cures for diseases. Simultaneously, with the increasing population and advances in medical sciences, the demand for drugs is continuously increasing and cannot be met with just plants. The ability to synthetically replicate the active compounds from these plants is essential in creating an ecologically-aware, sustainable future for drug design. Includes detailed coverage of therapeutic compound synthesis. Uses multiple real-world examples to support content. Lays out a sustainable template for the future of developing active agents from natural products.

Medicinal Chemistry

The inspiration provided by biologically active natural products to conceive of hybrids, congeners, analogs and unnatural variants is discussed by experts in the field in 16 highly informative chapters. Using well-documented studies over the past decade, this timely monograph demonstrates the current importance and future potential of natural products as starting points for the development of new drugs with improved properties over their progenitors. The examples are chosen so as to represent a wide range of natural products with therapeutic relevance among others, as anticancer agents, antimicrobials, antifungals, antisense nucleosides, antidiabetics, and analgesics. From the content: * Part I: Natural Products as Sources of Potential Drugs and Systematic Compound Collections * Part II: From Marketed Drugs to Designed Analogs and Clinical Candidates * Part III: Natural Products as an Incentive for Enabling Technologies * Part IV: Natural Products as Pharmacological Tools * Part V: Nature: The Provider, the Enticer, and the Healer

Green and Sustainable Medicinal Chemistry

Medicinal chemistry is a complex topic. Written in an easy to follow and conversational style, Basic Concepts in Medicinal Chemistry focuses on the fundamental concepts that govern the discipline of medicinal chemistry as well as how and why these concepts are essential to therapeutic decisions. The book emphasizes functional group analysis and the basics of drug structure evaluation. In a systematic fashion, learn how to identify and evaluate the functional groups that comprise the structure of a drug molecule and their influences on solubility, absorption, acid/base character, binding interactions, and stereochemical orientation. Relevant Phase I and Phase II metabolic transformations are also

discussed for each functional group. Key features include:

- Discussions on the roles and characteristics of organic functional groups, including the identification of acidic and basic functional groups.
- How to solve problems involving pH, pKa, and ionization; salts and solubility; drug binding interactions; stereochemistry; and drug metabolism.
- Numerous examples and expanded discussions for complex concepts.
- Therapeutic examples that link the importance of medicinal chemistry to pharmacy and healthcare practice.
- An overview of structure activity relationships (SARs) and concepts that govern drug design.
- Review questions and practice problems at the end of each chapter that allow readers to test their understanding, with the answers provided in an appendix.

Whether you are just starting your education toward a career in a healthcare field or need to brush up on your organic chemistry concepts, this book is here to help you navigate medicinal chemistry. About the Authors Marc W. Harrold, BS, Pharm, PhD, is Professor of Medicinal Chemistry at the Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA. Professor Harrold is the 2011 winner of the Omicron Delta Kappa "Teacher of the Year" award at Duquesne University. He is also the two-time winner of the "TOPS" (Teacher of the Pharmacy School) award at the Mylan School of Pharmacy. Robin M. Zavod, PhD, is Associate Professor for Pharmaceutical Sciences at the Chicago College of Pharmacy, Midwestern University, Downers Grove, IL, where she was awarded the 2012 Outstanding Faculty of the Year award. Professor Zavod also serves on the adjunct faculty for Elmhurst College and the Illinois Institute of Technology. She currently serves as Editor-in-Chief of the journal Currents in Pharmacy Teaching and Learning.

Small Molecule Medicinal Chemistry

Dr Alagarsamy's Textbook of Medicinal Chemistry is a much-awaited masterpiece in its arena. Targeted mainly to B. Pharm. students, this book will also be useful for M. Pharm. as well as M. Sc. organic chemistry and pharmaceutical chemistry students. It aims at eliminating the inadequacies in teaching and learning of medicinal chemistry by providing enormous information on all the topics in medicinal chemistry of synthetic drugs. Salient Features Contains clear classification, synthetic schemes, mode of action, metabolism, assay, pharmacological uses with the dose and structure-activity relationship (SAR) of the following classes of drugs: Drugs acting on inflammation Drugs acting on respiratory system Drugs acting on digestive system Drugs acting on blood and blood-forming organs Drugs acting on endocrine system Contains a complete section on chemotherapy and the various classes of chemotherapeutic agents. Also includes recent topics like anti-HIV agents Contains brief introduction about the physiological and pathophysiological conditions of diseases and their treatment under each topic Provides well-illustrated synthetic schemes and alternative synthetic routes for majority of drugs that help in quick and enhanced understanding of the subject Covers the syllabi of majority of Indian universities

The Practice of Medicinal Chemistry

Covering computational tools in drug design using techniques from chemoinformatics, molecular modelling and computational chemistry, this book explores these methodologies and applications of in silico medicinal chemistry. The first part of the book covers molecular representation methods in computing in

terms of chemical structure, together with guides on common structure file formats. The second part examines commonly used classes of molecular descriptors. The third part provides a guide to statistical learning methods using chemical structure data, covering topics such as similarity searching, clustering and diversity selection, virtual library design, ligand docking and de novo design. The final part of the book summarises the application of methods to the different stages of drug discovery, from target ID, through hit finding and hit-to-lead, to lead optimisation. This book is a practical introduction to the subject for researchers new to the fields of chemoinformatics, molecular modelling and computational chemistry.

Annual Reports in Medicinal Chemistry

The modern synthetic chemist applies all the tools available to identify the drug-like molecules with the best chances of becoming novel drugs. This book will act as a primer for graduates and postgraduates interested in a career in drug discovery. It covers both synthetic technologies currently impacting medicinal chemistry and emerging areas. The chapters focus on topics including: parallel medicinal chemistry; solid supported reagents; microwave assisted chemistry; flow synthesis, and high throughput reaction screening.

Medicinal Chemistry for Practitioners

Drug discovery is a constantly developing and expanding area of research. Developed to provide a comprehensive guide, the Handbook of Medicinal Chemistry covers the past, present and future of the entire drug development process. Highlighting the recent successes and failures in drug discovery, the book helps readers to understand the factors governing modern drug discovery from the initial concept through to a marketed medicine. With chapters covering a wide range of topics from drug discovery processes and optimization, development of synthetic routes, pharmaceutical properties and computational biology, the handbook aims to enable medicinal chemists to apply their academic understanding to every aspect of drug discovery. Each chapter includes expert advice to not only provide a rigorous understanding of the principles being discussed, but to provide useful hints and tips gained from within the pharmaceutical industry. This expertise, combined with project case studies, highlighting and discussing all areas of successful projects, make this an essential handbook for all those involved in pharmaceutical development.

Medicinal Chemistry of Anticancer Drugs

The first professional reference on this highly relevant topic, for drug developers, pharmacologists and toxicologists. The authors provide more than a systematic overview of computational tools and knowledge bases for drug metabolism research and their underlying principles. They aim to convey their expert knowledge distilled from many years of experience in the field. In addition to the fundamentals, computational approaches and their applications, this volume provides expert accounts of the latest experimental methods for investigating drug metabolism in four dedicated chapters. The authors discuss the most important

caveats and common errors to consider when working with experimental data. Collating the knowledge gained over the past decade, this practice-oriented guide presents methods not only used in drug development, but also in the development and toxicological assessment of cosmetics, functional foods, agrochemicals, and additives for consumer goods, making it an invaluable reference in a variety of disciplines.

Essentials of Organic Chemistry

Natural Products in Medicinal Chemistry

Annual Reports in Medicinal Chemistry provides timely and critical reviews of important topics in medicinal chemistry with an emphasis on emerging topics in the biological sciences that are expected to provide the basis for entirely new future therapies. Reviews on hot topics of interest in small molecule drug discovery heavily pursued by industrial research organizations Provides preclinical information in the context of chemical structures Knowledgeable section editors who evaluate invited reviews for scientific rigor

Medicinal Chemistry

An Introduction to Medicinal Chemistry

This volume provides an introduction to medicinal chemistry. It covers basic principles and background, and describes the general tactics and strategies involved in developing an effective drug.

Privileged Scaffolds in Medicinal Chemistry

Synthesis of Medicinal Agents from Plants

Medicinal Chemistry of Anticancer Drugs, Second Edition, provides an updated treatment from the point of view of medicinal chemistry and drug design, focusing on the mechanism of action of antitumor drugs from the molecular level, and on the relationship between chemical structure and chemical and biochemical reactivity of antitumor agents. Antitumor chemotherapy is a very active field of research, and a huge amount of information on the topic is generated every year. Cytotoxic chemotherapy is gradually being supplemented by a new generation of drugs that recognize specific targets on the surface or inside cancer cells, and resistance to antitumor drugs continues to be investigated. While these therapies are in their infancy, they hold promise of more effective therapies with fewer side effects. Although many books are available that deal with clinical aspects of cancer chemotherapy, this book provides a sorely needed update from the point of view of medicinal chemistry and drug design. Presents information in a clear and concise way using a large number of figures Historical background provides insights on how the process of drug discovery in the anticancer field has evolved Extensive

references to primary literature

Organic Chemistry Concepts and Applications for Medicinal Chemistry

Small structural modifications can significantly affect the pharmacokinetic properties of drug candidates. This book, written by a medicinal chemist for medicinal chemists, is a comprehensive guide to the pharmacokinetic impact of functional groups, the pharmacokinetic optimization of drug leads, and an exhaustive collection of pharmacokinetic data, arranged according to the structure of the drug, not its target or indication. The historical origins of most drug classes and general aspects of modern drug discovery and development are also discussed. The index contains all the drug names and synonyms to facilitate the location of any drug or functional group in the book. This compact working guide provides a wealth of information on the ways small structural modifications affect the pharmacokinetic properties of organic compounds, and offers plentiful, fact-based inspiration for the development of new drugs. This book is mainly aimed at medicinal chemists, but may also be of interest to graduate students in chemical or pharmaceutical sciences, preparing themselves for a job in the pharmaceutical industry, and to healthcare professionals in need of pharmacokinetic data.

An Introduction to Medicinal Chemistry

The Practice of Medicinal Chemistry, Fourth Edition provides a practical and comprehensive overview of the daily issues facing pharmaceutical researchers and chemists. In addition to its thorough treatment of basic medicinal chemistry principles, this updated edition has been revised to provide new and expanded coverage of the latest technologies and approaches in drug discovery. With topics like high content screening, scoring, docking, binding free energy calculations, polypharmacology, QSAR, chemical collections and databases, and much more, this book is the go-to reference for all academic and pharmaceutical researchers who need a complete understanding of medicinal chemistry and its application to drug discovery and development. Includes updated and expanded material on systems biology, chemogenomics, computer-aided drug design, and other important recent advances in the field Incorporates extensive color figures, case studies, and practical examples to help users gain a further understanding of key concepts Provides high-quality content in a comprehensive manner, including contributions from international chapter authors to illustrate the global nature of medicinal chemistry and drug development research An image bank is available for instructors at www.textbooks.elsevier.com

Medicinal Chemistry

Observing computational chemistry's proven value to the introduction of new medicines, this reference offers the techniques most frequently utilized by industry and academia for ligand design. Featuring contributions from more than fifty pre-eminent scientists, Computational Medicinal Chemistry for Drug Discovery surveys molecular structure computa

Medicinal Chemistry

Provides a concise introduction to the chemistry of therapeutically active compounds, written in a readable and accessible style. The title begins by reviewing the structures and nomenclature of the more common classes of naturally occurring compounds found in biological organisms. An overview of medicinal chemistry is followed by chapters covering the discovery and design of drugs, pharmacokinetics and drug metabolism, The book concludes with a chapter on organic synthesis, followed by a brief look at drug development from the research stage through to marketing the final product. The text assumes little in the way of prior biological knowledge. relevant biology is included through biological topics, examples and the Appendices. Incorporates summary sections, examples, applications and problems Each chapter contains an additional summary section and solutions to the questions are provided at the end of the text Invaluable for undergraduates studying within the chemical, pharmaceutical and life sciences.

Computational Medicinal Chemistry for Drug Discovery

Instant Notes in Organic Chemistry, Second Edition, is the perfect text for undergraduates looking for a concise introduction to the subject, or a study guide to use before examinations. Each topic begins with a summary of essential facts?an ideal revision checklist?followed by a description of the subject that focuses on core information, with clear, simple diagrams that are easy for students to understand and recall in essays and exams.

Green Approaches in Medicinal Chemistry for Sustainable Drug Design

An Introduction to Drug Synthesis explores the central role played by organic synthesis in the process of drug design and development - from the generation of novel drug structures to the improved efficiency of large scale synthesis.

Basic Concepts in Medicinal Chemistry

Extensive experimentation and high failure rates are a well-recognised downside to the drug discovery process, with the resultant high levels of inefficiency and waste producing a negative environmental impact. Sustainable and Green Approaches in Medicinal Chemistry reveals how medicinal and green chemistry can work together to directly address this issue. After providing essential context to the growth of green chemistry in relation to drug discovery in Part 1, the book goes on to identify a broad range of practical methods and synthesis techniques in Part 2. Part 3 reveals how medicinal chemistry techniques can be used to improve efficiency, mitigate failure and increase the environmental benignity of the entire drug discovery process, whilst Parts 4 and 5 discuss natural products and microwave-induced chemistry. Finally, the role of computers in drug discovery is explored in Part 6. Identifies novel and cost effective green medicinal chemistry approaches for improved efficiency and sustainability Reflects on techniques for a broad range of compounds and materials Highlights sustainable and green chemistry pathways

for molecular synthesis

An Introduction to Drug Synthesis

Written with the practicing medicinal chemist in mind, this is the first modern handbook to systematically address the topic of bioisosterism. As such, it provides a ready reference on the principles and methods of bioisosteric replacement as a key tool in preclinical drug development. The first part provides an overview of bioisosterism, classical bioisosteres and typical molecular interactions that need to be considered, while the second part describes a number of molecular databases as sources of bioisosteric identification and rationalization. The third part covers the four key methodologies for bioisostere identification and replacement: physicochemical properties, topology, shape, and overlays of protein-ligand crystal structures. In the final part, several real-world examples of bioisosterism in drug discovery projects are discussed. With its detailed descriptions of databases, methods and real-life case studies, this is tailor-made for busy industrial researchers with little time for reading, while remaining easily accessible to novice drug developers due to its systematic structure and introductory section.

An Introduction to Medicinal Chemistry

Contents: Gérard Jaouen, Nils Metzler-Nolte : Introduction ; Stéphane GIBAUD and Gérard JAOUEN: Arsenic - based drugs: from Fowler's solution to modern anticancer chemotherapy; Ana M. Pizarro, Abraha Habtemariam and Peter J. Sadler : Activation Mechanisms for Organometallic Anticancer Complexes; Angela Casini, Christian G. Hartinger, Alexey A. Nazarov, Paul J. Dyson : Organometallic antitumour agents with alternative modes of action; Elizabeth A. Hillard, Anne Vessières, Gerard Jaouen : Ferrocene functionalized endocrine modulators for the treatment of cancer; Megan Hogan and Matthias Tacke : Titanocenes - Cytotoxic and Anti-Angiogenic Chemotherapy Against Advanced Renal-Cell Cancer; Seann P. Mulcahy and Eric Meggers : Organometallics as Structural Scaffolds for Enzyme Inhibitor Design; Christophe Biot and Daniel Dive : Bioorganometallic Chemistry and Malaria; Nils Metzler-Nolte : Biomedical applications of organometal-peptide conjugates; Roger Alberto : Organometallic Radiopharmaceuticals; Brian E. Mann : Carbon Monoxide - an essential signaling molecule.

Fundamentals of Medicinal Chemistry

Drug Selectivity

NEW TO THIS EDITION Updated throughout with the latest discoveries Five new chapters covering * the molecular structure of receptors and the mechanisms of signal transduction *combinatorial synthesis * the role of computers in drug design * adrenergics * drug discovery and drug development

Review of Organic Functional Groups

Organic Chemistry Concepts and Applications for Medicinal Chemistry provides a

valuable refresher for understanding the relationship between chemical bonding and those molecular properties that help to determine medicinal activity. This book explores the basic aspects of structural organic chemistry without going into the various classes of reactions. Two medicinal chemistry concepts are also introduced: partition coefficients and the nomenclature of cyclic and polycyclic ring systems that comprise a large number of drug molecules. Given the systematic name of a drug, the reader is guided through the process of drawing an accurate chemical structure. By emphasizing the relationship between structure and properties, this book gives readers the connections to more fully comprehend, retain, apply, and build upon their organic chemistry background in further chemistry study, practice, and exams. Focused approach to review those organic chemistry concepts that are most important for medicinal chemistry practice and understanding Accessible content to refresh the reader's knowledge of bonding, structure, functional groups, stereochemistry, and more Appropriate level of coverage for students in organic chemistry, medicinal chemistry, and related areas; individuals seeking content review for graduate and medical courses and exams; pharmaceutical patent attorneys; and chemists and scientists requiring a review of pertinent material

Drug Metabolism Prediction

Medicinal Chemistry: An Introduction, Second Edition provides a comprehensive, balanced introduction to this evolving and multidisciplinary area of research. Building on the success of the First Edition, this edition has been completely revised and updated to include the latest developments in the field. Written in an accessible style, Medicinal Chemistry: An Introduction, Second Edition carefully explains fundamental principles, assuming little in the way of prior knowledge. The book focuses on the chemical principles used for drug discovery and design covering physiology and biology where relevant. It opens with a broad overview of the subject with subsequent chapters examining topics in greater depth. From the reviews of the First Edition: "It contains a wealth of information in a compact form" ANGEWANDTE CHEMIE, INTERNATIONAL EDITION "Medicinal Chemistry is certainly a text I would chose to teach from for undergraduates. It fills a unique niche in the market place." PHYSICAL SCIENCES AND EDUCATIONAL REVIEWS

New Developments in Medicinal Chemistry

This e-book series is recommended for readers who are interested in or work with current theoretical and experimental research in medicinal chemistry, with an emphasis on computer aided-drug design and organic synthesis for therapeutic purposes. The e-book series encompasses the multidisciplinary field of medicinal chemistry which overlaps the knowledge of chemistry, physics, biochemistry, biology and pharmacology. The second volume of the series contains the following topics: -Current State-of-the-Art for Virtual Screening and Docking Methods -Estimating Protein-Ligand Binding Affinity by NMR -ADME/Tox Predictions in Drug Design -Bioisosteric Replacements in Drug Design

Bioisosteres in Medicinal Chemistry

Pharmaceutical manufacturing was one of the first industries to recognize the importance of green chemistry, with pioneering work including green chemistry metrics and alternative solvents and reagents. Today, other topical factors also have to be taken into consideration, such as rapidly depleting resources, high energy costs and new legislation. This book addresses current challenges in modern green chemical technologies and sustainability thinking. It encompasses a broad range of topics covered by the CHEM21 project – Europe's largest public-private partnership project which aims to develop a toolbox of sustainable technologies for green chemical intermediate manufacture. Divided into two sections, the book first gives an overview of the key green chemistry tools, guidance and considerations aimed at developing greener processes, before moving on to look at cutting-edge synthetic methodologies. Featuring innovative research, this book is an invaluable reference for chemists across academia and industry wanting to further their knowledge and understanding of this important topic.

In Silico Medicinal Chemistry

Emphasizing applications of chemistry while reinforcing theory – especially in the areas of organic and physical chemistry – this new text prepares readers for career success in the pharmaceutical, medical, and biotech industries. Medicinal Chemistry: The Modern Drug Discovery Process delivers a comprehensive introduction to medicinal chemistry at an appropriate level of detail for a diverse range of readers. By highlighting the concepts and skills related to drug discovery, Stevens deepens readers' understanding of the knowledge and techniques necessary for their careers.

Instant Notes in Organic Chemistry

A comprehensive introduction to inorganic chemistry and, specifically, the science of metal-based drugs, Essentials of Inorganic Chemistry describes the basics of inorganic chemistry, including organometallic chemistry and radiochemistry, from a pharmaceutical perspective. Written for students of pharmacy and pharmacology, pharmaceutical sciences, medicinal chemistry and other health-care related subjects, this accessible text introduces chemical principles with relevant pharmaceutical examples rather than as stand-alone concepts, allowing students to see the relevance of this subject for their future professions. It includes exercises and case studies.

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