Shargel Applied Biopharmaceutics 5th Edition

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Modern Pharmaceutics Volume 1 Alexander T. Florence 2009-05-28 With over 100 illustrations, Volume 1 addresses the core disciplines of pharmaceutics (absorption, PK, excipients, tablet dosage forms, and packaging), and explores the challenges and paradigms of pharmaceutics. Key topics in Volume 1 include: • principles of drug absorption, chemical kinetics, and drug stability • pharmacokinetics • the effect of route of administration and distribution on drug action • in vivo imaging of dose forms: gamma scintigraphy, PET imaging NMR, MRI, etc. • powder technology • excipient design and characterization • preformulation • optimization techniques in pharmaceutical formulation and processing • disperse and surfactant systems • the solid state, tablet dosage forms, coating processes, and hard and soft shell capsules • parenteral products

Goldfrank's Toxicologic Emergencies, Ninth Edition Lewis S. Nelson 2010-05-31 The most trusted, rigorous, and up-to-date toxicology resource and educational companion available – now in full color Goldfrank's Toxicologic Emergencies continues to be the source you can turn to first for any poisoning or overdose. The text provides clear information on every aspect of toxicologic emergencies, from pharmacology to clinical presentation to management. Fully referenced and featuring a consistent organization, Goldfrank's begins with an in-depth examination of general principles of medical toxicology. It then progresses to the biochemical principles and molecular basis of toxicology, and provides detailed insight into how xenobiotics affect vital signs, organs, and systems throughout the body. Next, a wide spectrum of clinically important exposures -- including drugs, plants, metals, household products, occupational and environmental xenobiotics are covered within logical categories for easy access to information. Finally, the book concludes with sections on principles of practicing clinical toxicology in today's challenging healthcare environment. NEW TO THIS EDITION Full-color design and uniformly drawn figures clarify key concepts Special Considerations focus on decision-making in unique toxicologic circumstances, that influence clinical practice and have the potential to improve patient care Antidotes in Depth, following pertinent chapters, place each antidote in its proper context to ensure immediate availability of essential information relevant for clinical use More clinically-relevant figures and quick-reference tables Online learning center, available at www.goldfrankstoxicology.com, includes case studies, and a database of multiple choice questions that allow you to create a custom test for review and study. Every chapter is thoroughly rewritten and new chapters are added to reflect the very latest thinking in the field Here's why Goldfrank's is known worldwide as the field's leading text: General Approach to Medical Toxicology; The Biochemical and Molecular Basis of Medical Toxicology; The Pathophysiologic Basis of Medical; Toxicology: The Organ System Approach; The Clinical Basis of Medical Toxicology: Analgesics and Nonprescription Medications; Prescription Medications Psychopharmacologic Medications; Alcohols and Drugs of Abuse; Food Poisoning; Botanicals; Heavy Metals; Household Toxins; Pesticides; Occupational and Environmental Toxins; Toxic Envenomations; V. Special Populations; Preventive, Psychosocial, Nursing, Epidemiologic, Research & Legal Perspectives.

Applied Biopharmaceutics & Pharmacokinetics Leon Shargel 2005 Annotation The primary emphasis of this book is on the application and understanding of concepts. Basic theoretical discussions of the principles of biopharmaceutics and pharmacokinetics are provided, along with illustrative examples and practice problems and solutions to help the student gain skill in practical problem solving.

Biomedical & Pharmaceutical Sciences with Patient Care Correlations Reza Karimi 2014-01-29 Biomedical & Pharmaceutical Sciences with Patient Care Correlations provides a solid foundation in the areas of science that pharmacy students most need to understand to succeed in their education and career. Offering a comprehensive overview of the biomedical and pharmaceutical sciences, it is an ideal primary or secondary textbook for introductory courses. Students can also use this text to refresh their scientific knowledge before beginning graduate study. Biomedical & Pharmaceutical Sciences with Patient Care Correlations includes 16 chapters that cover subjects ranging from cell biology and medicinal chemistry to toxicology and biostatistics. It also includes clinical correlations and integrated cases. Practical as well as informative, this essential reference relates the subject matter to the real world of pharmacy practice to assist students throughout their graduate studies and professional careers. Features Provides a comprehensive introduction to the biomedical and pharmaceutical sciences curriculum Serves as an ideal text for all introductory pharmacy courses Covers the topics that are most challenging for students Relates science to the real world of pharmacy practice Includes over 525 illustrations, photos, and figures

Physics of PET and SPECT Imaging Magnus Dahlbom 2017-02-17 PET and SPECT imaging has improved to such a level that they are opening up exciting new horizons in medical diagnosis and treatment. This book provides a complete introduction to fundamentals and the latest progress in the field, including an overview of new scintillator materials and innovations in photodetector development, as well as the latest system designs and image reconstruction algorithms. It begins with basics of PET and SPECT physics, followed by technology advances and computing methods, quantitative techniques, multimodality imaging, instrumentation, pre-clinical and clinical imaging applications.

Renal Medicine and Clinical Pharmacy Rhiannon Braund 2020-07-08 This first volume of an exciting new book series offers a comprehensive and logically organized introduction to clinical pharmacy as applied to renal medicine. The volume opens with a review of renal pharmacokinetics: absorption; distribution; metabolism; and elimination, as well as drug dosing in renal impairment, and important knowledge specific to aging and renal impairment. Acute kidney injury receives extensive attention, including pre-renal, intra-renal, and post-renal injuries. The book also outlines the role of clinical pharmacy in chronic kidney disease and end stage renal failure. Additional chapters provide detailed information on the methods and pharmacokinetics of renal dialysis, and the epidemiology and management of drug-induced nephrotoxicity. The Advanced Clinical Pharmacy series provides a review of core pharmaceutical concepts, a foundation for optimizing pharmacotherapy, and an introduction to advanced clinical practice. The editors and contributors are international experts who distill the core knowledge of each specialty. The books offer real-world insights to benefit both new practitioners, and experienced pharmacists exploring new areas of clinical pharmacy

Introduction to the Pharmaceutical Sciences Nita K. Pandit 2007 This unique textbook provides an introductory, yet comprehensive overview of the pharmaceutical sciences. It is the first text of its kind to pursue an interdisciplinary approach in this area of study. Readers are introduced to basic concepts related to the specific disciplines in the pharmaceutical sciences, including pharmacology, pharmaceutics, pharmacokinetics, and medicinal chemistry. In an easy-to-read writing style, the book provides readers with up-to-date information on pharmacogenomics and includes comprehensive coverage of industrial drug development and regulatory approval processes. Each chapter includes chapter outlines and critical-thinking exercises, as well as numerous tables and graphs. More than 160 illustrations complement the text.

Handbook of Drug'Nutrient Interactions Joseph I. Boullata 2004-04-17 Although there is agreat deal ofliterature regarding drug-nutrientinteractions (DNis), there are limited sources of up-to-date comprehensive information. The Handbook of Drug-Nutrient Interactions admirably fills this gap. The editors, Dr. Joseph 1. Boullata and Dr. Vincent T. Armenti, ha ve a wealth of experience in this therapeutic ar ea and ha ve assembled a fine cadre of chapter authors who have individually contributed their high level of expertise. As treatment for many diseases becomes increasingly complex with multiple drug therapies scheduled at varying times, the need to identify clinically significant DNis is an essential part of medication management. This is a shared responsibility between health care professionals to interpret available data and individualize an approach to therapy that is compatible with the patient' s disease state, life stage, and dietary intake. Awareness ofthe significance of drug-food interactions is generally lacking. Although many texts contain lengthy lists of possible interactions, few data are provided for the clinician to gain an understanding of the mechanism of action of the interaction and subsequently apply the information to a particular patient or group of patients. For example, in the management of patients with HN -AIDS who are taking complex prescribed drug regimens, herbal products, and nutritional supplements, many of which are affected by dietary intake, careful attention to D Nls is a critic al component of therapy. Clinicians need to take account of not only the well-documented interactions between drugs and nutrients, but also the less obvious effects on drug-nutrient disposition and metabolism.

Manual for Pharmacy Technicians Bonnie S. Bachenheimer 2010-09-10 The trusted training resource for pharmacy technicians at all levels. The role of pharmacy technicians is rapidly expanding, and demand for well-trained technicians has never been higher! Technicians are assuming more responsibilities and are taking on greater leadership roles. Quality training material is increasingly important for new technicians entering the field, and current technicians looking to advance. Look no further than the new 4th edition of the best-selling Manual for Pharmacy Technicians to master the practical skills and gain the foundational knowledge all technicians need to be successful. NEW chapters cover the latest essentials: Specialty Pharmacy Practice Communication and Teamwork Billing and Reimbursement Durable and Nondurable Medical Equipment, Devices, and Supplies NEW features include: Full color design, photos and illustrations enhance learning Rx for Success boxes share tips to help techs excel on the job Technology Topics highlight the latest in automation & technical areas Safety First features provide critical advice for enhancing safety & reducing errors Bolded key terms defined in chapter-level glossaries Streamlined contents divide book into 4 simple parts: introduction to pharmacy practice, foundation knowledge and skills, practice basics, and business applications Expanded self-assessment questions and calculations content Alone or with the new edition of the Pharmacy Technician Certification Review and Practice Exam, the Manual for Pharmacy Technicians, 4th Edition offers pharmacy technicians the most relevant, authoritative, easy-to-use guide in the field. Want more exercises and practice? Look for the NEW Workbook for the Manual for Pharmacy Technicians.

Comparative Pharmacokinetics Jim E. Riviere 2011-01-14 Now in a revised edition, Comparative Pharmacokinetics: Principles, Techniques, and Applications presents the principles and techniques of comparative and veterinary pharmacokinetics in a detailed yet practical manner. Developed as a tool for ensuring that pharmacokinetics studies are properly designed and correctly interpreted, the book provides complete coverage of the conceptual basis of pharmacokinetics as used for quantifying biological processes from the perspectives of physiology and medicine. New chapters have been added on quantitative structure permeability relationships and bioequivalence, and a number of existing chapters have been significantly revised and expanded to provide a current resource for veterinary and comparative pharmacokinetics.

The Practice of Medicinal Chemistry Camille Georges Wermuth 2015-07-01 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

Drug Delivery Yitzhak Rosen 2017-09-19 Integrating the clinical and engineering aspects of drug delivery, this book offers a much needed comprehensive overview and patient-oriented approach for enhanced drug delivery optimization and advancement. Starting with an introduction to the subject and pharmacokinetics, it explores advances for such topics as oral, gastroretentive, intravitreal, and intrathecal drug delivery, as well as insulin delivery, gene delivery, and biomaterials-based delivery systems. It also describes drug delivery in cancer,

cardiac, infectious diseases, airway diseases, and obstetrics and gynecology applications. Examining special clinical states requiring innovative drug delivery modifications, such as hypercoagulability often seen in pregnancy, cancer, and autoimmune diseases, the book also discusses methods for improved drug delivery in clinical settings using clinical end points, clinical trials, simulations, and other venues. It also describes the latest drug delivery advances involving nanomaterials, NEMS and MEMS devices, hydrogels, microencapsulation, lipids, stem cells, patches, and ultrasound. The book is rounded out by a chapter on the FDA regulatory and bioethical challenges involved in advancing drug delivery.

Pharmacology Miles Hacker 2009-06-19 Pharmacology meets the rapidly emerging needs of programs training pharmacologic scientists seeking careers in basic research and drug discovery rather than such applied fields as pharmacy and medicine. While the market is crowded with many clinical and therapeutic pharmacology textbooks, the field of pharmacology is booming with the prospects of discovering new drugs, and virtually no extant textbook meets this need at the student level. The market is so bereft of such approaches that many pharmaceutical companies will adopt Hacker et al. to help train new drug researchers. The boom in pharmacology is driven by the recent decryption of the human genome and enormous progress in controlling genes and synthesizing proteins, making new and even custom drug design possible. This book makes use of these discoveries in presenting its topics, moving logically from drug receptors to the target molecules drug researchers seek, covering such modern topics along the way as side effects, drug resistance, pharmacogenomics, and even nutriceuticals, one in a string of culminating chapters on the drug discovery process. The book is aimed at advanced undergraduates and beginning graduate students in medical, pharmacy, and graduate schools looking for a solid introduction to the basic science of pharmacology and envisioning careers in drug research. Uses individual drugs to explain molecular actions Full color art program explains molecular and chemical concepts graphically Logical structure reflecting the current state of pharmacology and translational research Covers such intricacies as drug resistance and cell death Consistent format across chapters and pedagogical strategies make this textbook a superior learning tool

Handbook of Drug Metabolism, Third Edition Paul G. Pearson 2019-05-20 This book continues to be the definitive reference on drug metabolism with an emphasis on new scientific and regulatory developments. It has been updated based on developments that have occurred in the last 5 years, with new chapters on large molecules disposition, stereo-selectivity in drug metabolism, drug transporters and metabolic activation of drugs. Some chapters have been prepared by new authors who have emerged as subject area experts in the decade that has passed since publication of the first edition.

Nurse Anesthesia John J. Nagelhout 2014 Written specifically for nurse anesthetists, Nurse Anesthesia, 5th Edition provides comprehensive coverage of both scientific principles and evidence-based practice. It offers a complete overview of anatomy, physiology, pharmacology, and pathophysiology, and offers practical coverage of equipment and anesthesia management. This edition includes updated information on pharmacokinetics, clinical monitoring, drug delivery systems, and complications, and revises chapters on airway management and anesthesia for cardiac surgery. Written by leading nurse anesthesia experts John Nagelhout and Karen Plaus, this perennial bestseller prepares anesthesia students and CRNAs for today's clinical anesthesia practice. Over 650 figures of anatomy, nurse anesthesia procedures, and equipment depict complex concepts and information. An easy-to-use organization covers basic principles first, and builds on those with individual chapters for each surgical specialty. UPDATED references make it quick and simple to find the latest and most important research in the field. Over 700 tables and boxes highlight the most essential information in a quick, easy-to-reference format. Expert CRNA authors provide the current clinical information you'll use in daily practice. UPDATED pharmacology information includes pharmacokinetics, drug delivery systems, opiate antagonists, and key induction drugs. Over 100 NEW photos and illustrations enhance your understanding of difficult anesthesia concepts. UPDATED Airway Management and Anesthesia for Cardiac Surgery chapters are thoroughly revised. NEW coverage includes robotics, screening applications, and non-operating room best practices.

Mosby's Pathology for Massage Therapists - E-Book Susan G. Salvo 2017-08-24 Complete massage pathology information in one convenient text! Written by a massage therapist for massage therapists, Mosby's Pathology for Massage Therapists, 4th Edition provides direct information along with specific therapeutic recommendations. Coverage of over 300 pathologies shows you how to appropriately tailor treatment, and more than 500 full-color photographs make it easier to recognize common pathologies. This edition includes a new chapter on Hospital-based massage which covers protocols needed for therapists working with clients who are medically fragile. Written by massage therapy educator and practitioner Susan Salvo, this resource provides the pathology knowledge you need to succeed in the classroom and in your career. Coverage of over 300 pathologies provides you with ample information without being overwhelming. Over 500 full-color photographs helps you recognize common diseases and conditions. A user-friendly, comprehensive format makes it easy to find key information with learning objectives, list of pathologies, system overview, and pathologies, including description, etiology, signs and symptoms, treatment, and massage considerations. Caution boxes provide tips on prevention to keep practice safe and prepare students for emergency situations. Clinical Tips boxes provide brief, practical hints gleaned from the author's first-hand experience in clinical practice. Medical Technology boxes highlight special populations, such as clients in wheelchairs or with pacemakers, and explain what the medical device is, and what special precautions or contraindications practitioners should be aware of before working on these clients. List of pathologies with page number references included on the inside front cover for fast lookup of pathologies. UNIQUE! Hospital-based massage chapter covers different protocols needed for massage therapists working in institutionalized care setting and useful information about working with clients who are medically fragile. NEW! Updated pathologies reviewed by practicing massage therapists reflect what you will see in the field as a working practitioner. NEW! Pain content equips you with essential, up-to-date information on the latest theories and management techniques and provides the critical-thinking skills to apply that knowledge in practice.

ADMET for Medicinal Chemists Katya Tsaioun 2011-02-15 This book guides medicinal chemists in how to implement early ADMET testing in their workflow in order to improve both the speed and efficiency of their efforts. Although many pharmaceutical companies have dedicated groups directly interfacing with drug discovery, the scientific principles and strategies are practiced in a variety of different ways. This book answers the need to regularize the drug discovery interface; it defines and reviews the field of ADME for medicinal chemists. In addition, the scientific principles and the tools utilized by ADME scientists in a discovery setting, as applied to medicinal chemistry and structure modification to improve drug-like properties of drug candidates, are examined.

Physics of the Human Body Richard P. McCall 2010-05-09 Physics of the Human Body will help curious high school students, undergraduates with medical aspirations, and practicing medical professionals understand more about the underlying physics principles of the human body.

Clinical Pharmacology in Athletic Training Michelle Cleary 2021-10-12 Athletic trainers have a responsibility to provide high-quality pharmaceutical care while meeting both legal and ethical requirements. Clinical Pharmacology in Athletic Training empowers athletic trainers with a functional understanding of pharmacology that enables them to formulate a treatment plan intended to mitigate disease and improve the overall health of their patients. This text incorporates the most up-to-date content from the 2020 Commission on Accreditation of Athletic Training Education (CAATE) standards, and it emphasizes interprofessional practice to enable future and current athletic trainers to collaborate with other health professionals in a manner that optimizes the quality of care. Clinical Pharmacology in Athletic Training begins by addressing drug legislation and the legal aspects of the athletic trainer's role in sport medication. The text provides an overview of pharmacokinetics and pharmacodynamics with an emphasis on concepts relevant to clinical practice. Students are introduced to the generic and brand names, general classifications, and appropriate administration of drugs and are guided toward appropriate online reference materials. Part II of this text describes common medications for pain, inflammation, and infections. Part III includes medications for specific conditions, including respiratory, cardiovascular, gastrointestinal, neurological, gynecological, and mental health conditions. The text also includes current information on opioid analgesics, cannabis, and cannabinoid-based medications. Clinical Pharmacology in Athletic Training teaches students to administer appropriate pharmacological agents for the management of the patient's condition. The information includes indications, contraindications, dosing, interactions, and adverse reactions. The following features are included to aid in the learning process: Chapter objectives set the stage for the main topics covered in the chapter. Key terms are boldfaced to indicate terms of special importance, and a glossary of definitions is included at the back of the book. Red Flag sidebars highlight warnings and precautions for certain medications or medicolegal issues. Evidence in Pharmacology sidebars highlight recent research regarding medications. Clinical Application sidebars present real-life stories from the field of athletic training. Case studies highlight specific therapeutic medication applications and are accompanied by questions that prompt readers to think critically about the issues presented. Quick reference drug tables describe medication types, generic and brand names, pronunciations, common indications, and other special considerations for the athletic trainer. Over the past decade, there has been an increased emphasis on pharmacology in athletic training. Clinical Pharmacology in Athletic Training will equip students with appropriate skills and competencies, prepare them to meet patient needs, and enable them to work in interprofessional teams.

Chemistry of Plant Natural Products Sunil Kumar Talapatra 2015-03-05 Aimed at advanced undergraduate and graduate students and researchers working with natural products, Professors Sunil and Bani Talapatra provide a highly accessible compilation describing all aspects of plant natural products. Beginning with a general introduction to set the context, the authors then go on to carefully detail nomenclature, occurrence, isolation, detection, structure elucidation (by both degradation and spectroscopic techniques) stereochemistry, conformation, synthesis, biosynthesis, biological activity and commercial applications of the most important natural products of plant origin. Each chapter also includes detailed references (with titles) and a list of recommended books for additional study making this outstanding treatise a useful resource for teachers of chemistry and researchers working in universities, research institutes and industry.

Applied Biopharmaceutics & Pharmacokinetics, Fifth Edition Leon Shargel 2004-08-19 The most comprehensive text on the practical applications of biopharmaceuticals and pharmacokinetics! 4 STAR DOODY'S REVIEW! "The updated edition provides the reader with a solid foundation in the basic principles of pharmacokinetics and biopharmaceutics. Students will be able to apply the information to their clinical practice and researchers will find this to be a valuable reference. This modestly priced book should be the gold standard for student use."--Doody's Review Service The primary emphasis of this book is on the application and understanding of concepts. Basic theoretical discussions of the principles of biopharmaceutics and pharmacokinetics are provided, along with illustrative examples and practice problems and solutions to help the student gain skill in practical problem solving.

Pharmaceutics Alekha Dash 2013-10-12 Pharmaceutics: Basic Principles and Application to Pharmacy Practice is an engaging textbook that covers all aspects of pharmaceutics with emphasis on the basic science and its application to pharmacy practice. Based on curricular guidelines mandated by the American Council for Pharmacy Education (ACPE), this book incorporates laboratory skills by identifying portions of each principle that can be used in a clinical setting. In this way, instructors are able to demonstrate their adherence to ACPE standards and objectives, simply by using this book. Written in a straightforward and student-friendly manner, Pharmaceutics enables students to gain the scientific foundation to understand drug physicochemical properties, practical aspects of dosage forms and drug delivery systems, and the biological applications of drug administration. Key ideas are illustrated and reinforced through chapter objectives and chapter summaries. A companion website features resources for students and instructors, including videos illustrating difficult processes and procedures as well as practice questions and answers. Instructor resources include Powerpoint slides and a full-color image bank. This book is intended for students in pharmaceutical science programs taking pharmaceutics or biopharmaceutics courses at the undergraduate, graduate and doctoral level. Chapter objectives and chapter summaries illustrate and reinforce key ideas Designed to meet curricular guidelines for pharmaceutics and laboratory skills mandated by the Accreditation Council for Pharmacy Education (ACPE) Companion website features resources for students and instructors, including videos illustrating difficult processes and procedures and practice questions and answers. Instructor resources include Powerpoint slides and a full-color image bank

Theory and Practice of Contemporary Pharmaceutics Tapash K. Ghosh 2021-02-25 With a shift toward problem-based learning and critical thinking in many health science fields, professional pharmacy training faces a shift in focus as well. Although the Accreditation Council for Pharmacy Education (ACPE) has recently suggested guidelines for problem solving to be better integrated into pharmacy curriculum, pharmacy books currently available either address this material inadequately or lack it completely. Theory and Practice of Contemporary Pharmaceutics addresses this problem by challenging pharmacy students to think critically in preparation for situations that arise in clinical practice. This book offers a wealth of up-to-date information, organized in a logical sequence, corresponding to the art and science required for formulators in industry and dispensing pharmacists in the community. It breaks down the subject to its simplest form and includes numerous examples, case studies, and problems. In addition to presenting basic scientific principles, each chapter includes a self-evaluation tutorial designed to help you evaluate your understanding of the subject matter, numerical problems that provide practice in finding mathematical solutions, and case studies that measure your overall grasp of the subject matter by challenging you to craft a plausible solution to a real-life scenario using the concepts presented in that chapter. Written by authors selected from academia, industry, and regulatory agencies, the book presents an objective and balanced view of pharmaceutical science and its application. The authors' insights are extremely helpful to pharmacy students as well as practicing pharmacists involved in the development and/or dispensation of existing and new generation biotechnology-based drug products. This simplified and user-friendly book will present pharmaceutics in a way that it has never been presented before and will help prepare students and pharmacists for the competitive and challenging nature of the professional market.

Monte Carlo Simulation for the Pharmaceutical Industry Mark Chang 2010-09-29 Helping you become a creative, logical thinker and skillful "simulator," Monte Carlo Simulation for the Pharmaceutical Industry: Concepts, Algorithms, and Case Studies provides broad coverage of the entire drug development process, from drug discovery to preclinical and clinical trial aspects to commercialization. It presents the theories and methods needed to carry out computer simulations efficiently, covers both descriptive and pseudocode algorithms that provide the basis for

implementation of the simulation methods, and illustrates real-world problems through case studies. The text first emphasizes the importance of analogy and simulation using examples from a variety of areas, before introducing general sampling methods and the different stages of drug development. It then focuses on simulation approaches based on game theory and the Markov decision process, simulations in classical and adaptive trials, and various challenges in clinical trial management and execution. The author goes on to cover prescription drug marketing strategies and brand planning, molecular design and simulation, computational systems biology and biological pathway simulation with Petri nets, and physiologically based pharmacokinetic modeling and pharmacodynamic models. The final chapter explores Monte Carlo computing techniques for statistical inference. This book offers a systematic treatment of computer simulation in drug development. It not only deals with the principles and methods of Monte Carlo simulation, but also the applications in drug development, such as statistical trial monitoring, prescription drug marketing, and molecular docking.

Modern Pharmaceutics, Two Volume Set Alexander T. Florence 2016-04-19 This new edition brings you up-to-date on the role of pharmaceutics and its future paradigms in the design of medicines. Contributions from over 30 international thought leaders cover the core disciplines of pharmaceutics and the impact of biotechnology, gene therapy, and cell therapy on current findings. Modern Pharmaceutics helps you stay current

Applied Biopharmaceutics & Pharmacokinetics, Fifth Edition Leon Shargel 2004-09-09 The most comprehensive text on the practical applications of biopharmaceuticals and pharmacokinetics! 4 STAR DOODY'S REVIEW! "The updated edition provides the reader with a solid foundation in the basic principles of pharmacokinetics and biopharmaceutics. Students will be able to apply the information to their clinical practice and researchers will find this to be a valuable reference. This modestly priced book should be the gold standard for student use."--Doody's Review Service The primary emphasis of this book is on the application and understanding of concepts. Basic theoretical discussions of the principles of biopharmaceutics and pharmacokinetics are provided, along with illustrative examples and practice problems and solutions to help the student gain skill in practical problem solving.

Pharmacokinetics and Pharmacodynamics of Nanoparticulate Drug Delivery Systems Jayvadan K. Patel 2022 A reference is needed that addresses the recent progress in aspects of PK/PD methods and developments of nanoparticles for novel drug delivery systems. No other consolidated published reference discusses the PK/PD study of nanoparticle drug delivery systems. This book discusses the advantages of nanoparticle drug delivery systems (NPDDS) in enhancing the pharmacokinetics of many drugs that are not easily metabolized or that obtain the desired therapeutic effect with minimum toxicity. The authors provide an overview of biodistribution with a focus on polymer and lipid nanoparticles. This thorough reference is divided into three parts: Modelling, Specific carries and their potential to treat specific diseases.

Toxicology of the Gastrointestinal Tract Shayne C. Gad 2007-01-23 Toxicology of the Gastrointestinal Tract focuses on the specifics of the mechanisms and adverse effects of xenobiotic agents and pharmaceuticals on the structure and function of the GI tract. The book focuses on a number of specific areas of intestinal research. Beginning with the well-recognized and major functions of nutrient absorption and its role as a protective barrier, the text elaborates on the expanding body of knowledge that relates to the intestines as a major metabolic and immunologic organ involved in the synthesis and degradation of both natural and foreign substances. It includes an overview of the function and dysfunction of the human absorptive process and the effects of microbial flora on these processes, as well as specific classes of toxicants that target the GI tract. The international panel of contributors presents a critical appraisal of the interactions of chemicals and drugs with the gastrointestinal system and the experimental methods and regions of research on which to focus future efforts. Providing a complete and multidisciplinary overview of the gastrointestinal system both in health and as it is involved in the toxicity of exogenous agents, Toxicology of the Gastrointestinal Tract brings together the current and growing knowledge of this critical organ system in a single volume.

Basic Pharmacokinetics and Pharmacodynamics Sara E. Rosenbaum 2012-09-10 With its clear, straightforward presentation, this text enables you to grasp all the fundamental concepts of pharmacokinetics and pharmacodynamics. This will allow you to understand the time course of drug response and dosing regimen design. Clinical models for concentration and response are described and built from the basic concepts presented in earlier chapters. Your understanding of the material will be enhanced by guided computer exercises conducted on a companion website. Simulations will allow you to visualize drug behavior, experiment with different dosing regimens, and observe the influence of patient characteristics and model parameters. This makes the book ideal for self-study. By including clinical models of agonism, indirect drug effects, tolerance, signal transduction, and disease progression, author Sara Rosenbaum has created a work that stands out among introductory-level textbooks in this area.You'll find several features throughout the text to help you better understand and apply key concepts: Three fictitious drugs are used throughout the text to progressively illustrate the development and application of pharmacokinetic and pharmacodynamic principles Exercises at the end of each chapter reinforce the concepts and provide the opportunity to perform and solve common dosing problems Detailed instructions let you create custom Excel worksheets to perform simple pharmacokinetic analyses Because this is an introductory textbook, the material is presented as simply as possible. As a result, you'll find it easy to gain an accurate, working knowledge of all the core principles, apply them to optimize dosing regimens, and evaluate the clinical pharmacokinetic and pharmacodynamic literature.

Psychosocial Assessment and Treatment of Bariatric Surgery Patients James E. Mitchell 2012-04-27 Bariatric surgery plays an important role in the treatment of obesity; in this comprehensive resource the worldwide leaders of the field provide the most up-to-date information on the psychosocial issues that affect their patients. Included is an overview and history of surgical procedures, complete with illustrations, practical advice on topics such as physical activity and nutritional care after surgery, and essential information that allows clinicians to assist their clients as much as possible; for example, how pre-weight loss surgery psychosocial evaluations can serve as clinical interventions in their own right, and how structured interviews and questionnaires can be used in multiple contexts such as screening, treatment planning, and prognostic assessment. A distinctive chapter includes an overview of the special issues present in treating adolescents, who increasingly are the target of bariatric surgery procedures. This book is an essential reference for clinicians from the evaluation through the follow-up and aftercare of bariatric surgery patients.

Pediatric Epilepsy Blaise F. Bourgeois, MD 2007-12-16 The extensively updated third edition of Pediatric Epilepsy: Diagnosis and Therapy continues to be the definitive volume on the diagnosis, treatment, classification, and management of the childhood epilepsies. Written by nearly 100 international leaders in the field, this new edition progresses logically with major sections on the basic mechanisms of the disease, classification, epidemiology, etiology, diagnosis, and age-related syndromes of epilepsy. The core of the new third edition is its completely updated section on antiepileptic drugs, including an in-depth discussion of dosage considerations, drug toxicity, teratogenicity, and drug interactions, with recommendations for optimal combinations when multiple drug therapy is required. Features unique to the third edition include: Expanded section on the basic science and mechanism of epilepsy Completely updated drug chapters, including newly released drugs and those in development Expanded chapters on vagus nerve stimulation and surgical treatment Expanded section on co-morbidities The third edition includes 21 new chapters, including discussions of: epileptic channelopathies; epileptogenic cerebral cortical malformation; epilepsy genes; etiologies and workup; evidence-based medicine issues related to drug selection; Levetiracetam; Sulthiame; Pregabalin; herbal medications; basic and advanced imaging; immunotherapy issues; vagus nerve stimulation therapy; cognitive and psychiatric co-morbidities and educational placement; and psychosocial aspects of epilepsy.

Innovative Strategies, Statistical Solutions and Simulations for Modern Clinical Trials Mark Chang 2019-03-20 "This is truly an outstanding book. [It] brings together all of the latest research in clinical trials methodology and how it can be applied to drug development.... Chang et al provide applications to industry-supported trials. This will allow statisticians in the industry community to take these methods seriously." Jay Herson, Johns Hopkins University The pharmaceutical industry's approach to drug discovery and development has rapidly transformed in the last decade from the more traditional Research and Development (R & D) approach to a more innovative approach in which strategies are employed to compress and optimize the clinical development plan and associated timelines. However, these strategies are generally being considered on an individual trial basis and not as part of a fully integrated overall development program. Such optimization at the trial level is somewhat near-sighted and does not ensure cost, time, or development efficiency of the overall program. This book seeks to address this imbalance by establishing a statistical framework for overall/global clinical development optimization and providing tactics and techniques to support such optimization, including clinical trial simulations. Provides a statistical framework for achieve global optimization in each phase of the drug development process. Describes specific techniques to support optimization including adaptive designs, precision medicine, survival-endpoints, dose finding and multiple testing. Gives practical approaches to handling missing data in clinical trials using SAS. Looks at key controversial issues from both a clinical and statistical perspective. Presents a generous number of case studies from multiple therapeutic areas that help motivate and illustrate the statistical methods introduced in the book. Puts great emphasis on software implementation of the statistical methods with multiple examples of software code (both SAS and R). It is important for statisticians to possess a deep knowledge of the drug development process beyond statistical considerations. For these reasons, this book incorporates both statistical and "clinical/medical" perspectives.

Applied Biopharmaceutics and Pharmacokinetics Leon Shargel 2005 Provides the reader with a basic understanding of the principles of biopharmaceutics and pharmacokinetics as applied to drug product development and drug therapy. The revised and updated fifth edition of this popular text remains unique in teaching the student the basic concepts that may be applied to understanding the complex issues associated with the processes of drug delivery and the essentials of safe and effective drug therapy.

Developing Solid Oral Dosage Forms Yihong Qiu 2016-11-08 Developing Solid Oral Dosage Forms: Pharmaceutical Theory and Practice, Second Edition illustrates how to develop high-quality, safe, and effective pharmaceutical products by discussing the latest techniques, tools, and scientific advances in preformulation investigation, formulation, process design, characterization, scale-up, and production operations. This book covers the essential principles of physical pharmacy, biopharmaceutics, and industrial pharmacy, and their application to the research and development process of oral dosage forms. Chapters have been added, combined, deleted, and completely revised as necessary to produce a comprehensive, well-organized, valuable reference for industry professionals and academics engaged in all aspects of the development process. New and important topics include spray drying, amorphous solid dispersion using hot-melt extrusion, modeling and simulation, bioequivalence of complex modified-released dosage forms, biowaivers, and much more. Written and edited by an international team of leading experts with experience and knowledge across industry, academia, and regulatory settings Includes new chapters covering the pharmaceutical applications of surface phenomenon, predictive biopharmaceutics and pharmacokinetics, the development of formulations for drug discovery support, and much more Presents new case studies throughout, and a section completely devoted to regulatory aspects, including global product regulation and international perspectives

Lange Q&A Pharmacy, Tenth Edition Gary D. Hall 2011-03-11 The most effective and comprehensive pharmacy review for the NAPLEX® The ultimate pharmacy review covering every topic tested on the exam 1,500+ NAPLEX-style Q&As deliver unmatched preparation for the exam Build confidence and test-taking skills with more than 1500 NAPLEX®-style questions and tried-and-proven tips for boosting exam performance Learn from detailed explanations why answers are correct or incorrect Improve in every essential competency: pharmacology, pharmaceutical calculations, pharmacy, pharmaceutical compounding, biopharmaceutics and pharmacokinetics, health care equipment and supplies, and pharmaceutical care Recognize all frequently dispensed drugs, including the 200 generic drugs most likely to be dispensed by pharmacists EVERYTHING YOU NEED TO EXCEL ON THE NAPLEX® Questions that cover every topic found on the exam An entire chapter devoted to patient profiles, with each profile accompanied by a series of questions An informative description of the computer-based examination Two valuable appendices: frequently dispensed drugs and trade names versus generic names

Atlas van de farmacologie Heinz Lüllmann 2005

Generic Drug Product Development Isadore Kanfer 2007-11-15 The assessment of bioequivalence is an important process whereby the bioavailability of a generic drug product is compared with its brand-name counterpart. Generic pharmaceutical products must be approved as therapeutic equivalents to the brand name alternative in order to be interchangeable. The demonstration of bioequivalence is an important component of therapeutic equivalence. Bioequivalence studies are very expensive, time consuming and always have the possibility of failure. The objective of this textbook is to describe some of those specific bioequivalence issues which need to be considered for the design and conduct of bioequivalence studies. By exploring scientific, legal, and international regulatory challenges, Generic Drug Development, discusses the use of alternative approaches to the measurement of plasma drug concentrations for the demonstration of bioequivalence, and covers bioequivalence procedures for drug products that are not easily assessed - based upon the physical and chemical properties of the active drug and the nature of the drug product.

Applied Biopharmaceutics & Pharmacokinetics, Seventh Edition Leon Shargel 2015-11-22 The landmark textbook on the theoretical and practical applications of biopharmaceutics and pharmacokinetics—now fully updated. Explains how to detect clinical pharmacokinetic problems and apply basic pharmacokinetic principles to solve them Helps you critically evaluate biopharmaceutic studies involving drug product equivalency and unequivalency Chapters have been revised to reflect the latest clinical perspectives on drug performance, bioavailability, bioequivalence, pharmacokinetics, pharmacodynamics, and drug therapy The field’s leading text for more than three decades, Applied Biopharmaceutics & Pharmacokinetics gets you up to speed on the basics of the discipline like no other resource. Practical problems and clinical examples with discussions are integrated within each chapter to help you apply principles to patient care and drug consultation situations. In addition, outstanding pedagogy, including chapter objectives, chapter summaries, and FAQs, plus additional application questions, identify

and focus on key concepts. Written by authors who have both academic and clinical experience, Applied Biopharmaceutics & Pharmacokinetics shows you how to use raw data and formulate the pharmacokinetic models and parameters that best describe the process of drug absorption, distribution, and elimination. The book also helps you work with pharmacokinetic and biopharmaceutic parameters to design and evaluate dosage regimens of drugs. In the seventh edition of this must-have interactive learning tool, most of the chapters are updated to reflect our current understanding of complex issues associated with safe and efficacious drug therapy.

Nanotoxicology Nancy A. Monteiro-Riviere 2014-03-03 Since the first publication of this book in 2007, the field of nanoscience and nanomedicine continues to grow substantially. This second edition, Nanotoxicology: Progress toward Nanomedicine, enlists internationally recognized experts to document the continuing development and rationale for the safe design of engineered nanomaterials (ENM). This in

Handbook of Safety Assessment of Nanomaterials Bengt Fadeel 2014-12-10 The rapidly evolving field of nanomedicine refers to the clinical application of nanotechnologies. However, as with all new technologies, there are ethical, safety, and regulatory issues. This handbook, written by leading international experts, provides a meticulous overview of the state of the art of safety assessment of nanomaterials (nanotoxicology) in the context of their application in nanomedicine. The volume includes a historical perspective on the development of nanomedicine and its regulation, and a personal view of the future of (nano)medicine by Patrick Hunziker, president of the European Society of Nanomedicine. Ethical considerations in relation to nanomedicine are discussed. There are a series of chapters on organ-specific toxicities of nanomaterials, including pulmonary and cardiovascular toxicity, neurotoxicity, dermatotoxicity, and reproductive toxicity, as well as a discussion on immunotoxicity and genotoxicity. The importance of a thorough characterization of physicochemical properties of nanomaterials is emphasized. The handbook also contains a critical discussion on the applicability of in vitro versus in vivo methods and models for nanosafety assessment, along with an introduction to mathematical modeling approaches with a view to a predictive toxicology of nanomaterials. The overall aim is to provide a comprehensive, science-based framework for safety assessment of current and future nanomedicines.

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