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JH67BA - GIOVANNA SOFIA

This volume provides a comprehensive overview of the current issues facing scientists working on delivering drugs locally and systemically via the membranes that line the mouth. The book describes the anatomical and physiological challenges of this route for drug delivery and how they impact the design of oral mucosal drug delivery systems. It also provides a detailed description of current oral mucosal drug delivery technologies that overcome these challenges alongside research, development and assessment methods. In 11 authoritative chapters, the book affords an in-depth evaluation of the major issues associated with this route of administration, namely the retention of the drug/product at the site of administration and increasing drug permeability through the oral mucosa. The book provides insights into the in vitro and in vivo methods available to assess drug permeability and retention, offers solutions on how to improve the permeation of the drugs through the oral mucosa, and explores approaches to prolong drug/product retention at the site of administration. It also indicates future directions in research and product development. Oral Mucosal Drug Delivery and Therapy is a key resource for those wishing to extend their knowledge of this field. -- "The Scientist"

Paediatric Dermatology is an indispensable and highly-accessible practical guide for all healthcare professionals faced with the assessment, diagnosis, and treatment of children with skin diseases. The second edition has been fully revised and updated to take into account new advances in therapies including biologics and genetics, and emerging problems such as rashes associated with transplantation and immunosuppression. Divided into 39 comprehensive chapters written by experts in both dermatology and paediatrics, the book is organised according to presentation and

body site rather than diagnosis, making it ideal for quick reference in the clinical setting, as well as general study. It contains over 325 full-colour, high-quality clinical photographs of skin conditions, as well as simple algorithms to aid diagnosis of common presentations such as itchy red rashes, blistering disorders, bruising, and nail disorders. Features of more rare dermatological conditions are listed under the relevant clinical signs for easy reference and to aid diagnosis. Advice is given on when to refer to a dermatologist, while short descriptions of approved treatment modalities are given where appropriate.

PRINCIPLES AND CHEMICAL APPLICATIONS FOR B.SC.(HONS) POST GRADUATE STUDENTS OF ALL INDIAN UNIVERSITIES AND COMPETITIVE EXAMINATIONS.

This guide provides state-of-the-art information in order to maximise the quality and minimise the risks during donation, procurement, testing, processing, preservation, storage and distribution of tissues and cells. As with all transplanted material of human origin, tissues and cells carry risks of disease transmission, which must be controlled by the application of scrupulous donor selection criteria (including testing) and comprehensive quality systems. The idea behind this guide is to help professionals on a practical level by providing generic guidance that will help improve the rate of successful clinical application of tissues and cells. The guide makes reference to EU mandatory requirements where appropriate and describes generally-accepted good practice. It has been divided into two parts. Part A contains general requirements applicable to all establishments involved in the donation, procurement, testing, processing, preservation, storage and distribution of tissues and cells. Part B contains specific guidelines and requirements for the different tissue and/or cell types

Drug Safety Data: How to Analyze, Summarize and Interpret to Determine Risk was selected for The First Clinical Research Bookshelf - Essential reading for clinical research professionals by the Journal of Clinical Research Best Practices. Drug Safety Data: How to Analyze, Summarize and Interpret to Determine Risk provides drug safety/pharmacovogilance professionals, pharmaceutical and clinical research scientists, statisticians, programmers, medical writers, and technicians with an accessible, practical framework for the analysis, summary and interpretation of drug safety data. The only guide of its kind, Drug Safety Data: How to Analyze, Summarize and Interpret to Determine Risk is an invaluable reference for pre- and post-marketing risk assessment. With decades of pharmaceutical research and drug safety expertise, authors Dr. Klepper and Dr. Cobert discuss how quality planning, safety training, and data standardization result in significant cost, time, and resource savings. Through illustrative, step-by-step instruction, Drug Safety Data: How to Analyze, Summarize and Interpret to Determine Risk is the definitive guide to drug safety data analysis and reporting. Key features include: * Step-by-step instruction on how to analyze, summarize and interpret safety data for mandatory governmental safety reports * Pragmatic tips...and mistakes to avoid * Simple explanations of what safety data are collected, and what the data mean * Practical approaches to determining a drug effect and understanding its clinical significance * Guidance for determining risk throughout the lifecycle of a drug, biologic or nutraceutical * Exam-

ples of user-friendly data displays that enhance safety signal identification * Ways to improve data quality and reduce the time, resources and costs involved in mandatory safety reporting * Relevant material for the required training of drug safety/pharmacovigilance professionals * SPECIAL FEATURE: Actual examples of an Integrated Analysis of Safety (IAS) -used in the preparation of the Integrated Summary of Safety (ISS) and the Summary of Clinical Safety (SCS) reports -, and the Periodic Safety Update Report (PSUR)

Throughout the world, hundreds of thousands of people are addicted to opiates. The human, economic, and societal costs of this addiction are staggering: more than one-quarter of prison inmates are incarcerated for drug offenses and there has been a dramat.

Humans have been experimenting with lyophilization, or freeze-drying, as a method to preserve biological structures for over a thousand years. This comprehensive volume, intended for scientists in both academia and industry, covers a wide range of topics relevant to the formulation of peptide and protein drugs in the freeze--dried state.

Commonly known as the Orange Guide, this book remains an essential reference for all manufacturers and distributors of medicines in Europe. It provides a single authoritative source of European and UK guidance, information and legislation relating to the manufacture and distribution of human medicines.

Publisher's Note: Products purchased from 3rd Party sellers are not guaranteed by the Publisher for quality, authenticity, or access to any online entitlements included with the product. Newly focused on the practical communications skills student pharmacists need for effective practice, this updated Seventh Edition—now in full color— reflects new ACPE standards, including up-to-date coverage of the PPCP model, co-curricular experiences, interprofessional interaction and collaboration, and professional development. Practical, easy-to-use, and packed with relevant case studies and coverage of the latest advances in the field, this edition is ideal for the foundational course and pre-experiential training.

"These guidelines were produced by the World Health Organization (WHO), Department of Mental Health and Substance Abuse, in collaboration with the United Nations Office on Drugs and Crime (UNODC) a Guidelines Development Group of technical experts, and in consultation with the International Narcotics Control Board (INCB) secretariat and other WHO departments. WHO also wishes to acknowledge the financial contribution of UNODC and the Joint United Nations Programme on HIV/AIDS (UNAIDS) to this project. " - p. iv

Enterprise resource planning (ERP) refers to large commercial software packages that promise a seamless integration of information flow through an organization. Traditionally, separate units were created within an organization to carry out various tasks, and these functional areas would create their own information systems thereby giving rise to systems that were not integrated. ERP strives to provide a solution to these problems. Enterprise Resoure Planning Solutions and Management examines the issues that need to be further studied and better understood to ensure successful implementation and deployment of ERP systems.

Pharmaceutical product development is a multidisciplinary activity involving exten-

sive efforts in systematic product development and optimization in compliance with regulatory authorities to ensure the quality, efficacy and safety of resulting products. Pharmaceutical Product Development equips the pharmaceutical formulation scientist with extensive and up-to--date knowledge of drug product development and covers all steps from the beginning of product conception to the final packaged form that enters the market and lifecycle management thereof. Applications of core scientific principles for product development are also thoroughly discussed in conjunction with the latest approaches involving design of experiment and quality by design with comprehensive illustrations based on practical case studies of several dosage forms. The book presents pharmaceutical product development information in an easy-to-read mode with simplified theories, case studies and guidelines for students, academicians and professionals in the pharmaceutical industry. It is an invaluable resource and hands-on guide covering managerial, regulatory and practical aspects of pharmaceutical product lifecycle management.

Adopting a practical approach, the authors provide a detailed interpretation of the existing regulations (GMP, ICH), while also discussing the appropriate calculations, parameters and tests. The book thus allows readers to validate the analysis of pharmaceutical compounds while complying with both the regulations as well as the industry demands for robustness and cost effectiveness. Following an introduction to the basic parameters and tests in pharmaceutical validation, including specificity, linearity, range, precision, accuracy, detection and quantitation limits, the text focuses on a life-cycle approach to validation and the integration of validation into the whole analytical quality assurance system. The whole is rounded off with a look at future trends. With its first-hand knowledge of the industry as well as regulating bodies, this is an invaluable reference for analytical chemists, the pharmaceutical industry, pharmaceutists, QA officers, and public authorities.

Each year, organizations spend millions of dollars trying out new innovations and improvements-and millions will be wasted if they can't quickly find out what's working and what is not. The Success Case Method offers a breakthrough evaluation technique that is easier, faster, and cheaper than competing approaches, and produces compelling evidence decision-makers can actually use. Because it seeks out the best stories of how real individuals have actually used innovations, The Success Case Method can ferret out success no matter how small or infrequent. It can salvage the few ''gems'' of success from a larger initiative that is not doing well or find out how to make a partially successful effort even more successful. The practical methods and tools in this book can help those who initiate and foster change, including leaders, executives, managers, consultants, training directors, and anyone else who is trying to make things work better in organizations get the greatest returns for their investments.

Pattern Recognition - a pulsating techno-thriller by William Gibson, bestselling author of Neuromancer Cayce Pollard has been flown to London. She's a 'coolhunter' - her services for hire to global corporations desperate for certainty in a capricious and uncertain world. Now she's been offered a special project: track down the makers of the addictive online film that's lighting up the 'net. Hunting the source

will take her to Tokyo and Moscow and put her in the sights of Japanese computer crazies and Russian Mafia men. She's up against those who want to control the film, to own it - who figure breaking the law is just another business strategy. The kind of people who relish turning the hunter into the hunted . . . William Gibson is a prophet and a satirist, a black comedian and an outstanding architect of cool. Readers of Neal Stephenson, Ray Bradbury and Iain M. Banks will love this book. Pattern Recognition is the first novel in the Blue Ant trilogy - read Spook Country and Zero History for more. 'A big novel, full of bold ideas . . . races along like an expert thriller' GQ 'Dangerously hip. Its dialogue and characterization will amaze you. A wonderfully detailed, reckless journey of espionage and lies' USA Today 'A compelling, humane story with a sympathetic heroine searching for meaning and consolation in a post-everything world' Daily Telegraph Idoru is a gripping techno-thriller by William Gibson, bestselling author of Neuromancer 'Fast, witty and cleverly politicized' Guardian

Accessible, concise, and clinically focused, Essentials of Pain Medicine, 4th Edition, by Drs. Honorio T. Benzon, Srinivasa N. Raja, Scott M. Fishman, Spencer S. Liu, and Steven P. Cohen, presents a complete, full--color overview of today’s theory and practice of pain medicine and regional anesthesia. It provides practical guidance on the full range of today’s pharmacologic, interventional, neuromodulative, physiotherapeutic, and psychological management options for the evaluation, treatment, and rehabilitation of persons in pain. Covers all you need to know to stay up to date in practice and excel at examinations – everything from basic considerations through local anesthetics, nerve block techniques, acupuncture, cancer pain, and much more. Uses a practical, quick-reference format with short, easy-to-read chapters. Presents the management of pain for every setting where it is practiced, including the emergency room, the critical care unit, and the pain clinic. Features hundreds of diagrams, illustrations, summary charts and tables that clarify key information and injection techniques – now in full color for the first time. Includes the latest best management techniques, including joint injections, ultrasound-guided therapies, and new pharmacologic agents (such as topical analgesics). Discusses recent global developments regarding opioid induced hyperalgesia, addiction and substance abuse, neuromodulation and pain management, and identification of specific targets for molecular pain.

This handbook provides the first-ever inside view of today's integrated approach to rational drug design. Chemoinformatics experts from large pharmaceutical companies, as well as from chemoinformatics service providers and from academia demonstrate what can be achieved today by harnessing the power of computational methods for the drug discovery process. With the user rather than the developer of chemoinformatics software in mind, this book describes the successful application of computational tools to real-life problems and presents solution strategies to commonly encountered problems. It shows how almost every step of the drug discovery pipeline can be optimized and accelerated by using chemoinformatics tools -- from the management of compound databases to targeted combinatorial synthesis, virtual screening and efficient hit--to-lead transition. An invaluable resource for drug developers and medicinal

chemists in academia and industry.
State-of-the-art review on atopic eczema, one of the most common skin diseases today. This multi-authored handbook covers all aspects relevant for physicians from various disciplines.
This research study seeks to understand the nature of organisational change with respect to offshore outsourcing of information technology services in a multinational pharmaceutical company, and to examine the effectiveness of approaches used to manage this change so that lessons may be drawn from these experiences. Despite the abundant literature on effective organisational change management, the key factors that need to be managed properly at different stages of the offshore outsourcing process are not well understood. The research adopts a processual view to paint a broad picture of the issues involved in these different stages. A generic process model of change, based on the review of the change literature, was first developed to represent how change was intended to occur. This model focuses on the following four stages in the change process: context, diagnosis and planning, implementation, and institutionalisation. The research employs an interpretive case study approach and draws on fieldwork from three independent information systems departments (cases) of the company, where offshore outsourcing programmes were implemented. Qualitative data from semi-structured interviews, direct observation and document analysis are analysed by applying the generic process model to produce a detailed account of the way in which change was managed in the case organisations. The findings reveal that a combination of contextual factors, both external and internal to the company, influenced the adoption and use of offshore outsourcing in the case organisations. Externally, the economic forces were found to be the main catalyst for the change, while internally the role of the executive leadership and the lack of internal resources further explain the motivations behind the adoption of offshore outsourcing. The study illustrates that achieving successful outcomes from offshore outsourcing activities critically depends on the organisation adequately addressing a number of factors, such as conveying a sense of urgency, developing and communicating the vision, identifying the benefits of change and how they will be delivered, generating short-term wins, providing education and training, developing a fit between the change and organisational culture, etc., throughout the change process. The findings also highlight the effects of offshore outsourcing on the case organisations, including change in job roles and responsibilities and organisational learning activities that enable corrective actions to improve change management efforts. An important contribution of this research is the development of a model providing a more comprehensive understanding of the change process associated with the implementation of offshore IT outsourcing. Recommendations for policy makers and change managers to improve change management practice based on the research findings, as well as recommendations for further research, form a significant part of the conclusions.

To facilitate the development of novel drug delivery systems and biotechnology-oriented drugs, the need for new excipients to be developed and approved continues to increase. Excipient Development for Pharmaceutical, Biotechnology, and Drug

Delivery Systems serves as a comprehensive source to improve understanding of excipients and forge new avenue

Pain is the most common symptom bringing a patient to a physician's attention. Physicians training in pain medicine may originate from different disciplines and approach the field with varying backgrounds and experience. This book captures the theory and evidence-based practice of behavioral, psychotherapeutic and psychopharmacological treatments in modern pain medicine. The book's contributors span the fields of psychiatry, psychology, anesthesia, neurology, physical medicine and rehabilitation, and nursing. Thus the structure and content of the book convey the interdisciplinary approach that is the current standard for the successful practice of pain management. The book is designed to be used as a text for training fellowships in pain medicine, as well as graduate courses in psychology, nursing, and other health professions.

This book provides a detailed account of the most recent developments, challenges and solutions to seamlessly advance and launch a lyophilized biologics or vaccine product, based on diverse modalities, ranging from antibodies (e.g., monoclonal, fused), complex biologics (e.g., antibody drug conjugate, PEGylated proteins), and vaccines (e.g., recombinant-protein based). The authors adeptly guide the reader through all crucial aspects, from biophysical and chemical stability considerations of proteins, analytical methods, advances in controlled ice nucleation and quality-by-design approaches, alternate drying technology, to latest regulatory, packaging and technology transfer considerations to develop a stable, safe and effective therapeutic protein, vaccine and biotechnology products. Lyophilized Biologics and Vaccines: Modality-Based Approaches is composed of four sections with a total of 17 chapters. It serves as a reference to all critical assessments and steps from early pre-formulation stages to product launch: Provides recent understanding of heterogeneity of protein environment and selection of appropriate buffer for stabilization of lyophilized formulations Details the latest developments in instrumental analysis and controlled ice nucleation technology Explains in-depth lyophilized (or dehydrated) formulation strategies considering diverse modalities of biologics and vaccines, including plasmid DNA and lipid-based therapeutics Details an exhaustive update on quality-by-design and process analytical technology approaches, illustrated superbly by case studies and FDA perspective Provides the latest detailed account of alternate drying technologies including spray drying, bulk freeze-drying and crystallization, supported exceptionally by case studies Provides a step-by-step guide through critical considerations during process scale-up, technology transfer, packaging and drug delivery device selection, for a successful lyophilization process validation, regulatory submission and product launch Chapters are written by one or more world-renowned leading authorities from academia, industry or regulatory agencies, whose expertise cover lyophilization of the diverse modalities of biopharmaceuticals. Their contributions are based on the exhaustive review of literature coupled with excellent hands-on experiences in laboratory or GMP setup, making this an exceptional guide to all stages of lyophilized or dehydrated product development.

Small Molecule Drug Discovery: Methods, Molecules and Applications presents the

methods used to identify bioactive small molecules, synthetic strategies and techniques to produce novel chemical entities and small molecule libraries, chemoinformatics to characterize and enumerate chemical libraries, and screening methods, including biophysical techniques, virtual screening and phenotypic screening. The second part of the book gives an overview of privileged cyclic small molecules and major classes of natural product-derived small molecules, including carbohydrate-derived compounds, peptides and peptidomimetics, and alkaloid-inspired compounds. The last section comprises an exciting collection of selected case studies on drug discovery enabled by small molecules in the fields of cancer research, CNS diseases and infectious diseases. The discovery of novel molecular entities capable of specific interactions represents a significant challenge in early drug discovery. Small molecules are low molecular weight organic compounds that include natural products and metabolites, as well as drugs and other xenobiotics. When the biological target is well defined and understood, the rational design of small molecule ligands is possible. Alternatively, small molecule libraries are being used for unbiased assays for complex diseases where a target is unknown or multiple factors contribute to a disease pathology. Outlines modern concepts and synthetic strategies underlying the building of small molecules and their chemical libraries useful for drug discovery Provides modern biophysical methods to screening small molecule libraries, including high-throughput screening, small molecule microarrays, phenotypic screening and chemical genetics Presents the most advanced chemoinformatics tools to characterize the structural features of small molecule libraries in terms of chemical diversity and complexity, also including the application of virtual screening approaches Gives an overview of structural features and classification of natural product-derived small molecules, including carbohydrate derivatives, peptides and peptidomimetics, and alkaloid-inspired small molecules

At the core of this book lies the question how to approach medicines, risks and communication as a researcher - or anybody planning and evaluating a communication intervention, or wanting to understand communication events in private and the media. With a view to tackle current shortcomings of communication systems and processes for improved implementation, patient satisfaction and health outcomes, a multilayered approach is presented. This combines multiple data types and methods to obtain a wider and deeper understanding of the major parties and their interactions, as well as the healthcare, social and political contexts of information flows, how they interfere and which impact they have. Illustrated with real life experiences of safety concerns with medicines, worldwide active experts discuss the methods and contributions their disciplines can offer. With considerations on terminologies, tabulated overviews on communication types and outcomes, a patient-centred vision and plain language for non-medical readers, the book creates a platform for multidisciplinary collaborations amongst researchers as well as practitioners from communications, healthcare, the social sciences and pharmacovigilance. Importantly, it advocates for an active role of patients and highlights the achievements and aspirations of patient organisations. Finally, the book suggests establishing an in-

clusive discipline of humanities and epidemiology of medicinal product risk communication to realise full research potential. The authors are driven by the curiosity for communication as the most human behaviour, and as good health is amongst the basic human needs, medicinal product risk communication is an exciting research field of high global relevance.

Highly pathogenic avian influenza (HPAI) represents a threat to poultry industries worldwide and to people's livelihoods, and a potential threat to human health. The international community has a vested interest in minimizing the spread of this disease. Countries may be under threat of introduction of HPAI through unregulated poultry trade and marketing practices and, on rare occasions, exposure of poultry to wild birds, especially waterfowl. FAO and the World Organisation for Animal Health have prepared the first edition of this manual to help national animal health authorities and other stakeholders prepare for a possible incursion of HPAI, detect disease as soon as possible and respond as rapidly as possible to contain the disease. This second edition reflects lessons learned and provides additional details. This manual is an invaluable source of useful information for anyone involved in poultry-keeping and animal health practices.

The field of isotope effects has expanded exponentially in the last decade, and researchers are finding isotopes increasingly useful in their studies. Bringing literature on the subject up to date, Isotope Effects in Chemistry and Biology covers current principles, methods, and a broad range of applications of isotope effects in the physical, biolo

Designed as a practical guide for the pharmaceutical industry, this book covers how to apply cutting-edge marketing concepts and tools to the real-world intricacies of marketing a heavily regulated product whose success is determined not by the actual end-user, but by various industry stakeholders. From creating a worldwide vision that cascades into local tactics to managing a drug portfolio or pricing a particular product, this book guides readers through developing, implementing, and auditing a successful marketing strategy geared specifically to the pharmaceutical industry. It provides graphs, tables, worksheets, pharmaceutical case studies, and a sample marketing strategy.

Defining importance of diseases; FAO/EMPRES: a new emphasis; Early detection; The need for surveillance; What is surveillance?; Surveillance on the ground; Putting a surveilance system in place; Surveillance for what?; Surveillance when and how?; Surveillance in resource-poor countries; Information systems; Setting the goals; Determining needs and outputs; Computerisation; Questionnaire design; Databases; Data quality control; Feedback; The role of GIS; Motivating and training field staff; Awareness creation among decision-makers; Using surveillance as a management tool; FAO involvement in surveillance and information systems development; Examples of questionnaires.

Preceded by: Oxford handbook of clinical specialties. 8th ed. / Judith Collier ... [et al.]. 2009.

This book contains essential knowledge on the preparation, control, logistics, dispensing and use of medicines. It features chapters written by experienced pharmacists working in hospitals and academia throughout Europe, complete with practical examples as well as information on current EU-legislation. From prescription to production, from usage instructions to pro-

curement and the impact of medicines on the environment, the book provides step-by-step coverage that will help a wide range of readers. It offers product knowledge for all pharmacists working directly with patients and it will enable them to make the appropriate medicine available, to store medicines properly, to adapt medicines if necessary and to dispense medicines with the appropriate information to inform patients and caregivers about product care and how to maintain their quality. This basic knowledge will also be of help to industrial pharmacists to remind and focus them on the application of the medicines manufactured. The basic and practical knowledge on the design, preparation and quality management of medicines can directly be applied by the pharmacists whose main duty is production in community and hospital pharmacies and industries. Undergraduate as well as graduate pharmacy students will find knowledge and backgrounds in a fully coherent way and fully supported with examples.

With over 400 drug monographs, this book covers the technical, practical and legal aspects that you should consider before prescribing or administering drugs via enteral feeding tubes.

The Lumpy skin disease (LSD) is a viral disease of cattle that has dramatic effects on rural livelihoods, which strongly dependent on cattle. The disease slashes milk production and may lead sterility in bulls and fertility problems in females. It damages hides, and causes death due to secondary bacterial infections. Although traditionally limited to sub-Saharan Africa, LSD has slowly been invading new territories such as the Middle East and Turkey, and since 2015, most of the Balkan countries, the Caucasus and the Russian Federation, where the disease continues to spread and the risk of an imminent incursion into other unaffected countries, is very high. Veterinarians, cattle farmers, and others along the value chain are facing the disease for first time and are unfamiliar with LSD’s clinical presentation, its transmission routes and the available prevention and control options. This manual aims to fill these gaps by providing veterinary professionals and paraprofessionals with the in formation they need to promptly diagnose and react to an outbreak of LSD. Cattle farmers will also benefit from reading it.

Pharmaceutical Emulsions: A Drug Developer's Toolbag coversall the key aspects of pharmaceutical emulsions, starting from thefundamental scientific basics, to the pharmaceutical forms and thechemical tests for its application. The author uses his extensiveexperience in both industry and academic experience to provide aconcise, student friendly guide to the essential fundamentals ofphysical pharmacy. Divided into three clear sections, the text begins with SectionA - Consideration for Product: Medicinal Formulation whichincludes a historical perspective, explanation of what is anemulsion, stability and instability, and manufacture. Section B -Forms, Use and Application follows, with chapters on creamsand ointments, pastes and bases, colloids, transdermal, gels andimplants. The final Section, Tests: Chemistry to control thequality, efficacy and fitness for purpose of the productincludes chapters on physic-chemical properties, sizing andmicroscopy, rheology, QC and finally questions, calculations anddilemmas. Throughout the text there are numerous figures, diagramsand tables to engage the reader.

This is an invaluable reference for all students ofpharmaceutical sciences, pharmacy industrial pharmaceuticalsciences, physical pharmacy and pharmaceutical forms as wellas industry professionals

Foot-and-mouth disease (FMD) is one of the most serious transboundary animal diseases. It is a highly contagious viral disease, and may have rapid and unanticipated national and international spread. Although not a very lethal disease for adult animals, it can cause crippling socio-economic consequences, through high production and trade losses. This manual provides information on the nature of FMD and the principles and strategic options for its prevention, control and elimination. Guidelines are provided for individual countries threatened by FMD to formulate their overall national policy on control and eradication of a possible incursion of the disease.

3D printing is forecast to revolutionise the pharmaceutical sector, changing the face of medicine development, manufacture and use. Potential applications range from pre-clinical drug development and dosage form design through to the fabrication of functionalised implants and regenerative medicine. Within clinical pharmacy practice, printing technologies may finally lead to the concept of personalised medicines becoming a reality. This volume aims to be the definitive resource for anyone thinking of developing or using 3D printing technologies in the pharmaceutical sector, with a strong focus on the translation of printing technologies to a clinical setting. This text brings together leading experts to provide extensive information on an array of 3D printing techniques, reviewing the current printing technologies in the pharmaceutical manufacturing supply chain, in particular, highlighting the state-of-the-art applications in medicine and discussing modern drug product manufacture from a regulatory perspective. This book is a highly valuable resource for a range of demographics, including academic researchers and the pharmaceutical industry, providing a comprehensive inventory detailing the current and future applications of 3D printing in pharmaceuticals. Abdul W. Basit is Professor of Pharmaceutics at the UCL School of Pharmacy, University College London. Abdul’s research sits at the interface between pharmaceutical science and gastroenterology, forging links between basic science and clinical outcomes. He leads a large and multidisciplinary research group, and the goal of his work is to further the understanding of gastrointestinal physiology by fundamental research. So far, this knowledge has been translated into the design of new technologies and improved disease treatments, many of which are currently in late-stage clinical trials. He has published over 350 papers, book chapters and abstracts and delivered more than 250 invited research presentations. Abdul is also a serial entrepreneur and has filed 25 patents and founded 3 pharmaceutical companies (Kuecept, Intract Pharma, FabRx). Abdul is a frequent speaker at international conferences, serves as a consultant to many pharmaceutical companies and is on the advisory boards of scientific journals, healthcare organisations and charitable bodies. He is the European Editor of the International Journal of Pharmaceutics. Abdul was the recipient of the Young Investigator Award in Pharmaceutics and Pharmaceutical Technology from the American Association of Pharmaceutical Scientists (AAPS) and is the only non-North American scientist to receive this award. He was also

the recipient of the Academy of Pharmaceutical Sciences (APS) award. Simon Gaisford holds a Chair in Pharmaceutics and is Head of the Department of Pharmaceutics at the UCL School of Pharmacy, University College London. He has published 110 papers, 8 book chapters and 4 authored books. His research is focused on novel technologies for manufacturing medicines, particularly using ink-jet printing and 3D printing, and he is an expert in the physico-chemical characterisation of compounds and formulations with thermal methods and calorimetry.

A respected resource for decades, the Guide for the Care and Use of Laboratory Animals has been updated by a committee of experts, taking into consideration input from the scientific and laboratory animal communities and the public at large. The Guide incorporates new scientific information on common laboratory animals, including aquatic species, and includes extensive references. It is organized around major components of animal use: Key concepts of animal care and use. The Guide sets the framework for the humane care and use of laboratory animals. Animal care and use program. The Guide discusses the concept of a broad Program of Animal Care and Use, including roles and responsibilities of the Institutional Official, Attending Veterinarian and the Institutional Animal Care and Use Committee. Animal environment, husbandry, and management. A chapter on this topic is now divided into sections on terrestrial and aquatic animals and provides recommendations for housing and environment, husbandry, behavioral and population management, and more. Veterinary care. The Guide discusses veterinary care and the responsibilities of the Attending Veterinarian. It includes recommendations on animal procurement and transportation, preventive medicine (including animal biosecurity), and clinical care and management. The Guide addresses distress and pain recognition and relief, and issues surrounding euthanasia. Physical plant. The Guide identifies design issues, providing construction guidelines for functional areas; considerations such as drainage, vibration and noise control, and environmental monitoring; and specialized facilities for animal housing and research needs. The Guide for the Care and Use of Laboratory Animals provides a framework for the judgments required in the management of animal facilities. This updated and expanded resource of proven value will be important to scientists and researchers, veterinarians, animal care personnel, facilities managers, institutional administrators, policy makers involved in research issues, and animal welfare advocates.