Access Free The Challenge Of Cmc Regulatory Compliance For Biopharmaceuticals By Geigert John 2013 Hardcover Pdf For Free

Regulatory Affairs in the Pharmaceutical Industry Jun 28 2022 Regulatory Affairs in the Pharmaceutical Industry is a comprehensive reference that compiles all the information available pertaining to regulatory procedures currently followed by the pharmaceutical industry. Designed to impart advanced knowledge and skills required to learn the various concepts of regulatory affairs, the content covers new drugs, generic drugs and their development, regulatory filings in different countries, different phases of clinical trials, and the submission of regulatory documents like IND (Investigational New Drug), NDA (New Drug Application) and ANDA (Abbreviated New Drug Application). Chapters cover documentation in the pharmaceutical industry, generic drug development, code of Federal Regulation (CFR), the ANDA regulatory approval process, the process and documentation for US registration of foreign drugs, the regulation of combination products and medical devices, the CTD and ECTD formats, and much more. Updated reference on drug approval processes in key global markets Provides comprehensive coverage of concepts and regulatory affairs Presents a concise compilation of the regulatory requirements of different countries Introduces the fundamentals of manufacturing controls and their regulatory importance

The Core Model Apr 14 2021 The Core Model: A Collaborative Paradigm for the Pharmaceutical Industry and Global Health Care develops the innovative core model, an organizational research and design paradigm and economic theory that proposes a collaborative approach to resolving global health issues and improving the productivity of drug development. The model proposes that scientific collaboration does not occur in an unstructured manner, but actually takes place within a highly structured order where knowledge is transferred, integrated and finally translated into commercial products. An understanding of this model will help solve the global pharmaceutical industry ?s productivity problems and address important global health care and economic issues. This book is useful to researchers, advanced students, regulators, and management in pharmaceutical industries, as well as healthcare professionals, those working in health economics, and those interested in scientific innovation processes. Explores the current state-of-the-art in the pharmaceutical industry and the global healthcare sector Includes insights from world-leading figures in the pharmaceutical industry, healthcare sector, federal funding agencies, regulatory bodies, investment sector, entrepreneurship, intellectual property law, philanthropic organizations, and advocacy groups Develops in-depth, original concepts, which have important implications in the understanding of, and search for, potential solutions to the world ?s health care crisis

Case Studies in Bayesian Methods for Biopharmaceutical CMC Dec 11 2020 The subject of this book is applied Bayesian methods for chemistry, manufacturing, and control (CMC) studies in the biopharmaceutical industry. The book has multiple authors from industry and academia, each contributing a case study (chapter). The collection of case studies covers a broad array of CMC topics, including stability analysis, analytical method development, specification setting, process development and optimization, process control, experimental design, dissolution testing, and comparability studies. The analysis of each case study includes a presentation of code and reproducible output. This book is written with an academic level aimed at practicing nonclinical biostatisticians, most of whom have graduate degrees in statistics. • First book of its kind focusing strictly on CMC Bayesian case studies • Case studies with code and output • Representation from several companies across the industry as well as academia • Authors are leading and well-known Bayesian statisticians in the CMC field • Accompanying website with code for reproducibility • Reflective of real-life industry applications/problems

Biosimilars Apr 26 2022 This book provides a comprehensive overview of the biosimilar regulatory framework, the development process and clinical aspects for development of biosimilars. The development path of a biosimilar is just as unique as a development path of a new drug, tailored by the mechanism of action, the quality of the molecule, published information on the reference product, the current competitive environment, the target market and regulatory guidance, and most importantly, the emerging totality of evidence for the proposed biosimilar during development. For the ease of readers, the book comprises of six sections as follows: Section I: Business, Health Economics and Intellectual Property Landscape for Biosimilars Section II: Regulatory Aspects of Development and Approval for Biosimilars Section III: Biopharmaceutical Development and Manufacturing of Biosimilars Section IV: Analytical Similarity Considerations for Biosimilars Section V: Clinical aspects of Biosimilar Development Section VI: Biosimilars- Global Development and Clinical Experience Chapters have been written by one or more experts from academia, industry or regulatory agencies who have been involved with one or more aspects of biosimilar product development. The authors and editors have an expertise in commercialization and pricing of biosimilars, intellectual property considerations for biosimilars, chemistry manufacturing controls (CMC) and analytical development for biosimilars, regulatory and clinical aspects of biosimilar development. Besides the industry practitioners, the book includes several contributions from regulators across the globe.

Improving and Accelerating Therapeutic Development for Nervous System Disorders Jun 04 2020 Improving and Accelerating Therapeutic Development for Nervous System Disorders is the summary of a workshop convened by the IOM Forum on Neuroscience and Nervous System Disorders to examine opportunities to accelerate early phases of drug development for nervous system drug discovery. Workshop participants discussed challenges in neuroscience research for enabling faster entry of potential treatments into first-in-human trials, explored how new and emerging tools and technologies may improve the efficiency of research, and considered mechanisms to facilitate a more effective and efficient development pipeline. There are several challenges to the current drug development pipeline for nervous system disorders. The fundamental etiology and pathophysiology of many nervous system disorders are unknown and the brain is inaccessible to study, making it difficult to develop accurate models. Patient heterogeneity is high, disease pathology can occur years to decades before becoming clinically apparent, and diagnostic and treatment biomarkers are lacking. In addition, the lack of validated targets, limitations related to the predictive validity of animal models - the extent to which the model predicts clinical efficacy - and regulatory barriers can also impede translation and drug development for nervous system disorders. Improving and Accelerating Therapeutic Development for Nervous System Disorders identifies avenues for moving directly from cellular models to human trials, minimizing the need for animal models to test efficacy, and discusses the potential benefits and risks of such an approach. This report is a timely discussion of opportunities to improve early drug development with a focus toward preclinical trials.

Risk Management Applications in Pharmaceutical and Biopharmaceutical Manufacturing Oct 09 2020 Sets forth tested and proven risk management practices in drug manufacturing Risk management is essential for safe and efficient pharmaceutical and biopharmaceutical manufacturing, control, and distribution. With this book as their guide, readers involved in all facets of drug manufacturing have a single, expertly written, and organized resource to guide them through all facets of risk management and analysis. It sets forth a solid foundation in risk management concepts and then explains how these concepts are applied to drug manufacturing. Risk Management Applications in Pharmaceutical and Biopharmaceutical Manufacturing features contributions from leading international experts in risk management and drug manufacturing. These contributions reflect the latest research, practices, and industry standards as well as the authors' firsthand experience. Readers can turn to the book for: Basic foundation of risk management principles, practices, and applications Tested and proven tools and methods for managing risk in pharmaceutical and biopharmaceutical product manufacturing processes Recent FDA guidelines, EU regulations, and international standards governing the application of risk management to drug manufacturing Case studies and detailed examples demonstrating the use and results of applying risk management principles to drug product manufacturing Bibliography and extensive references leading to the literature and helpful resources in the field With its unique focus on the application of risk management to biopharmaceutical and pharmaceutical manufacturing, this book is an essential resource for pharmaceutical and process engineers as well as safety and compliance professionals involved in drug manufacturing.

Semantic Web: Concepts, Technologies and Applications Aug 19 2021 The Web is growing at an astounding pace surpassing the 8 billion page mark. However, most pages are still designed for human consumption and cannot be processed by machines. This book provides a well-paced introduction to the Semantic Web. It covers a wide range of topics, from new trends (ontologies, rules) to existing technologies (Web Services and software agents) to more formal aspects (logic and inference). It includes: real-world (and complete) examples of the application of Semantic Web concepts; how the technology presented and discussed throughout the book can be extended to other application areas.

Bayesian Analysis with R for Drug Development Jun 16 2021 Drug development is an iterative process. The recent publications of regulatory guidelines further entail a lifecycle approach. Blending data from disparate sources, the Bayesian approach provides a flexible framework for drug development. Despite its advantages, the uptake of Bayesian methodologies is lagging behind in the field of pharmaceutical development. Written specifically for pharmaceutical practitioners, Bayesian Analysis with R for Drug Development: Concepts, Algorithms, and Case Studies, describes a wide range of Bayesian applications to problems throughout pre-clinical, clinical, and Chemistry, Manufacturing, and Control (CMC) development. Authored by two seasoned statisticians in the pharmaceutical industry, the book provides detailed Bayesian solutions to a broad array of pharmaceutical problems. Features Provides a single source of information on Bayesian statistics for drug development Covers a wide spectrum of pre-clinical, clinical, and CMC topics Demonstrates proper Bayesian applications using real-life examples Includes easy-to-follow R code with Bayesian Markov Chain Monte Carlo performed in both JAGS and Stan Bayesian software platforms Offers sufficient background for each problem and detailed description of solutions suitable for practitioners with limited Bayesian knowledge Harry Yang, Ph.D., is Senior Director and Head of Statistical Sciences at AstraZeneca. He has 24 years of experience across all aspects of drug research and development and extensive global regulatory experiences. He has published 6 statistical books, 15 book chapters, and over 90 peer-reviewed papers on diverse scientific and statistical subjects, including 15 joint statistical works with Dr. Novick. He is a frequent invited speaker at national and international conferences. He also developed statistical courses and conducted training at the FDA and USP as well as Peking University. Steven Novick, Ph.D., is Director of Statistical Sciences at AstraZeneca. He has extensively contributed statistical methods to the biopharmaceutical literature. Novick is a skilled Bayesian computer programmer and is frequently invited to speak at conferences, having developed and taught courses in several areas, including drug-combination analysis and Bayesian methods in clinical areas. Novick served on IPAC-RS and has chaired several national statistical conferences.

From Clone to Clinic May 16 2021 This book contains a selection of the papers presented at the meeting "Between Clone and Clinic" which was organised in March 1990 in Amsterdam by the dutch Organisation for Applied Research, TNO, and the University of Utrecht. The scope of this meeting was the development of biotechnological pharmaceuticals mainly made

by recombinant DNA technology or monoclonal antibody techniques. All aspects concerning the development of the products after host cells producing them are obtained where discussed. The meeting was attended by twohundred specialists from all over the globe, including phar macologists, toxicologists, registration experts, Quality Assurence managers, production en gineers and physicians. Biotechnological pharmaceuticals are in general large and complex protein molecules. Bringing these products to the market poses other problems than encountered with the classical chemical drugs. The source of biotechnological pharmaceuticals are living cells. The function of cells are depend ent on many factors and the stability of production may be a problem. Good Laboratory and Manufactory Practices with Quality Control (GLP and GMP) are of paramount importance and are discussed in a number of papers. The products of the new biotechnology are often highly specific and only active in the human species. Also the side effects can only be studied in the clinical setting. Even when the product is active in animals there is the problem of antigenicity. During treatment the animals will produce antibodies which neutralise the activity. So safety testing may prove difficult.

Statistical Applications for Chemistry, Manufacturing and Controls (CMC) in the Pharmaceutical Industry Nov 02 2022 This book examines statistical techniques that are critically important to Chemistry, Manufacturing, and Control (CMC) activities. Statistical methods are presented with a focus on applications unique to the CMC in the pharmaceutical industry. The target audience consists of statisticians and other scientists who are responsible for performing statistical analyses within a CMC environment. Basic statistical concepts are addressed in Chapter 2 followed by applications to specific topics related to development and manufacturing. The mathematical level assumes an elementary understanding of statistical methods. The ability to use Excel or statistical packages such as Minitab, JMP, SAS, or R will provide more value to the reader. The motivation for this book came from an American Association of Pharmaceutical Scientists (AAPS) short course on statistical methods applied to CMC applications presented by four of the authors. One of the course participants asked us for a good reference book, and the only book recommended was written over 20 years ago by Chow and Liu (1995). We agreed that a more recent book would serve a need in our industry. Since we began this project, an edited book has been published on the same topic by Zhang (2016). The chapters in Zhang discuss statistical methods for CMC as well as drug discovery and nonclinical development. We believe our book complements Zhang by providing more detailed statistical analyses and examples.

The Pharmaceutical Regulatory Process Dec 23 2021 This Second Edition examines the mechanisms and means to establish regulatory compliance for pharmaceutical products and company practices. It focuses on major legislative revisions that impact requirements for drug safety reviews, product regulatory approvals, and marketing practices. Written by top industry professionals, practicing attorneys, and FDA regulators, it includes policies and procedures that pharmaceutical companies need to implement regulatory compliance post-approval. New chapters cover: the marketing of unapproved new drugs and FDA efforts to keep them in regulatory compliance pharmacovigilance programs designed to prevent widespread safety issues legal issues surrounding the sourcing of foreign APIs the issues of counterfeit drugs updates on quality standards

You're Not Fired as a Result of Mergers, Acquisitions & Reorganizations Mar 26 2022 This book is a no non-sense, practical, how-to-do book on "surviving" and even coming out "ahead" from "mergers, acquisitions and reorganizations." The author has shared 29 years of first-hand experience during which he has survived through seven mergers and several reorganizations and even moved up in the company. The book has provided an in-depth discussion on pre-merger activities and three phases of merger, acquisition and reorganization activity. The book also provides work sheets to assess where one is in doing the right things during merger, acquisition and reorganization. The reader will benefit in his or her career by following the teachings of this book.

Pharmaceutical Quality by Design Dec 31 2019 A practical guide to Quality by Design for pharmaceutical product development Pharmaceutical Quality by Design: A Practical Approach outlines a new and proven approach to pharmaceutical product development which is now being rolled out across the pharmaceutical industry internationally. Written by experts in the field, the text explores the QbD approach to product development. This innovative approach is based on the application of product and process understanding underpinned by a systematic methodology which can enable pharmaceutical companies to ensure that quality is built into the product. Familiarity with Quality by Design is essential for scientists working in the pharmaceutical industry. The authors take a practical approach and put the focus on the industrial aspects of the new QbD approach to pharmaceutical product development and manufacturing. The text covers quality risk management tools and analysis, applications of QbD to analytical methods, regulatory aspects, quality systems and knowledge management. In addition, the book explores the development and manufacture of drug substance and product, design of experiments, the role of excipients, multivariate analysis, and include several examples of applications of QbD in actual practice. This important resource: Covers the essential information about Quality by Design (QbD) that is at the heart of modern pharmaceutical development Puts the focus on the industrial aspects of the new QbD approach Includes several illustrative examples of applications of QbD in practice Offers advanced specialist topics that can be systematically applied to industry Pharmaceutical Quality by Design offers a guide to the principles and application of Quality by Design (QbD), the holistic approach to manufacturing that offers a complete understanding of the manufacturing processes involved, in order to yield consistent and high quality products.

An Overview of FDA Regulated Products Sep 27 2019 Today’s challenge, especially for many newcomers to the regulated industry, is not necessarily to gather regulatory information, but to know how to interpret and apply it. The ability to discern what is important from what is not, and to interpret regulatory documents correctly, provides a valuable competitive advantage to any newcomer or established professional in this field. An Overview of FDA Regulated Products: From Drugs and Medical Devices to Food and Tobacco provides a valuable summary of the key information to unveil the meaning of critical, and often complex, regulatory concepts. Concise and easy to read with practical explanations, key points,

summaries and case studies, this book highlights the regulatory processes involved in bringing an FDA regulated product from research and development to approval and market. Although the primary focus will be on the US system, this book also features global perspectives where appropriate. A valuable resource for students, professors and professionals, An Overview of FDA Regulated Products illustrates the most important elements and concepts so that the reader can focus on the critical issues and make the necessary connections to be successful. Provides an overview of key regulatory requirements using a practical approach that features detailed discussions of hypothetical and real-world case studies in order to highlight the concepts and applications of regulations Covers all FDA regulated products, including drugs, biologics, medical devices, cosmetics, foods, dietary supplements, cosmetics, veterinary products, tobacco and more in one single reference Illustrates complex topics in a clear, succinct and engaging manner by breaking down technical terms and offering straightforward and easy to understand explanations

FDA Regulatory Affairs Oct 01 2022 FDA Regulatory Affairs is a roadmap to prescription drug, biologics, and medical device development in the United States. Written in plain English, the concise and jargon-free text demystifies the inner workings of the US Food and Drug Administration (FDA) and facilitates an understanding of how the agency operates with respect to compliance and product approval, including clinical trial exemptions, fast track status, advisory committee procedures, and more. The Third Edition of this highly successful publication: Examines the harmonization of the US Federal Food, Drug, and Cosmetic Act with international regulations on human drug, biologics and device development, research, manufacturing, and marketing Includes contributions from experts at organizations such as the FDA, National Institutes of Health (NIH), and PAREXEL Focuses on the new drug application (NDA) process, cGMPs, GCPs, quality system compliance, and corresponding documentation requirements Provides updates to the FDA Safety and Innovation Act (FDASIA), incorporating pediatric guidelines and follow-on biologics regulations from the 2012 Prescription Drug User Fee Act (PDUFA) V Explains current FDA inspection processes, enforcement options, and how to handle FDA meetings and required submissions Co-edited by an industry leader (Mantus) and a respected academic (Pisano), FDA Regulatory Affairs, Third Edition delivers a compilation of the selected US laws and regulations as well as a straightforward commentary on the FDA product approval process that’s broadly useful to both business and academia.

Global Pediatric Development of Drugs, Biologics, and Medical Devices Sep 19 2021

Peptide Therapeutics Feb 22 2022 Peptide therapy has become a key strategy in innovative drug development, however, one of the potential barriers for the development of novel peptide drugs in the clinic is their deficiencies in clearly defined chemistry, manufacturing and controls (CMC) strategy from clinical development to commercialization. CMC can often become a rate-limiting step due to lack of knowledge and lack of a formal policy or guidelines on CMC for peptide-based drugs. Regulators use a risk-based approach, reviewing applications on a case-by-case basis. Peptide Therapeutics: Strategy and Tactics for Chemistry, Manufacturing, and Controls covers efficient manufacturing of peptide drug substances, a review of the process for submitting applications to the regulatory authority for drug approval, a holistic approach for quality attributes and quality control from a regulatory perspective, emerging analytical tools for the characterisation of impurities, and the assessment of stability. This book is an essential reference work for students and researchers, in both academia and industry, with an interest in learning about CMC, and facilitating development and manufacture of peptide-based drugs.

Supply Chain Management in the Drug Industry Nov 09 2020 This book bridges the gap between practitioners of supply-chain management and pharmaceutical industry experts. It aims to help both these groups understand the different worlds they live in and how to jointly contribute to meaningful improvements in supply-chains within the globally important pharmaceutical sector. Scientific and technical staff must work closely with supply-chain practitioners and other relevant parties to help secure responsive, cost effective and risk mitigated supply chains to compete on a world stage. This should not wait until a drug has been registered, but should start as early as possible in the development process and before registration or clinical trials. The author suggests that CMC (chemistry manufacturing controls) drug development must reset the line of sight – from supply of drug to the clinic and gaining a registration, to the building of a patient value stream. Capable processes and suppliers, streamlined logistics, flexible plant and equipment, shorter cycle times, effective flow of information and reduced waste. All these factors can and should be addressed at the CMC development stage.

GLOBAL PHARMACEUTICAL AND BIOLOGICS REGULATORY STRATEGY. May 28 2022

The Challenge of CMC Regulatory Compliance for Biopharmaceuticals Jan 04 2023 Biopharmaceuticals (i.e., biological medicines sourced from genetically-engineered living systems) for treatment of human diseases have become a significant percentage of the pharmaceutical industry. And not just the recombinant DNA-derived proteins and monoclonal antibodies (both from the innovators and biosimilars); but now, an increasing awareness of the importance of gene therapy and genetically engineered cellular medicinal products. These biopharmaceuticals are being developed by many companies whose Chemistry, Manufacturing & Control (CMC) teams have varying degrees of familiarity or experience with the CMC strategy and regulatory compliance requirements for these challenging products. Companies clearly plan out the strategy for their clinical study plans, but frequently, the development of a strategy for CMC is an afterthought. Coupled with the complexity of the biopharmaceutical manufacturing processes and products, and this can be a recipe for disaster. The third edition of this book provides insights and practical guidance for the CMC teams to develop an acceptable cost-effective, risk-based CMC regulatory compliance strategy for all biopharmaceuticals (recombinant proteins, monoclonal antibodies, genetically engineered viruses and genetically engineered human cells) from early clinical stage development through market approval. The third edition of this book provides added coverage for the biosimilars, antibody drug conjugates (ADCs), bispecific antibodies, genetically engineered viruses, and

genetically engineered cells. This third edition of the book also addresses the heightened pressure on CMC regulatory compliance timelines due to the introduction of expedited clinical pathways moving the clinical development closer to a seamless phase process (e.g., FDA Breakthrough Therapy designation, CBER Regenerative Medicine Advanced Therapy (RMAT) designation, EMA Priority Medicines (PRIME) designation). The Challenge of CMC Regulatory Compliance for Biopharmaceuticals is essential, practical information for all pharmaceutical development scientists, Manufacturing and Quality Unit staff, Regulatory Affairs personnel, and senior management involved in the manufacture of biopharmaceuticals.
Pharmaceutical Inhalation Aerosol Technology, Second Edition Mar 14 2021 This thoroughly revised and expanded reference provides authoritative discussions on the physiologic, pharmacologic, metabolic, molecular, cellular and physicochemical factors, influencing the efficacy and utilization of pharmaceutical aerosol. It analyzes the latest science and developments in the generation, administration and characterization of these compounds, showcasing current clinical applications, the efficiency and limitations of major aerosol products and emerging aerosol therapies impacting the field.
Biosimilars Jan 12 2021 As many biological products face losing their patents in the next decade, the pharmaceutical industry needs an abbreviated regulatory pathway for approval of biosimilar drug products, which are cost-effective, follow-on/subsequent versions of the innovator's biologic products. But scientific challenges remain due to the complexity of both the manufacturing process and the structures of biosimilar products. Written by a top biostatistics researcher, Biosimilars: Design and Analysis of Follow-on Biologics is the first book entirely devoted to the statistical design and analysis of biosimilarity and interchangeability of biosimilar products. It includes comparability tests of important quality attributes at critical stages of the manufacturing processes of biologic products. Connecting the pharmaceutical/biotechnology industry, government regulatory agencies, and academia, this state-of-the-art book focuses on the scientific factors and practical issues related to the design and analysis of biosimilar studies. It covers most of the statistical questions encountered in various study designs at different stages of research and development of biological products.
Pharmaceutical Stress Testing Sep 07 2020 The second edition of Pharmaceutical Stress Testing: Predicting Drug Degradation provides a practical and scientific guide to designing, executing and interpreting stress testing studies for drug substance and drug product. This is the only guide available to tackle this subject in-depth. The Second Edition expands coverage from chemical stability into the physical aspects of stress testing, and incorporates the concept of Quality by Design into the stress testing construct / framework. It has been revised and expanded to include chapters on large molecules, such as proteins and antibodies, and it outlines the changes in stress testing that have emerged in recent years. Key features include: A renowned Editorial team and contributions from all major drug companies, reflecting a wealth of experience. 10 new chapters, including Stress Testing and its relationship to the assessment of potential genotoxic degradants, combination drug therapies, proteins, oligonucleotides, physical changes and alternative dosage forms such as liposomal formulations Updated methodologies for predicting drug stability and degradation pathways Best practice models to follow An expanded Frequently Asked Questions section This is an essential reference book for Pharmaceutical Scientists and those working in Quality Assurance and Drug Development (analytical sciences, formulations, chemical process, project management).
International Regulatory Harmonization Amid Globalization of Drug Development Nov 21 2021 The past several decades have been a time of rapid globalization in the development, manufacture, marketing, and distribution of medical products and technologies. Increasingly, research on the safety and effectiveness of new drugs is being conducted in countries with little experience in regulation of medical product development. Demand has been increasing for globally harmonized, science-based standards for the development and evaluation of the safety, quality, and efficacy of medical products. Consistency of such standards could improve the efficiency and clarity of the drug development and evaluation process and, ultimately, promote and enhance product quality and the public health. To explore the need and prospects for greater international regulatory harmonization for drug development, the IOM Forum on Drug Discovery, Development, and Translation hosted a workshop on February 13-14, 2013. Discussions at the workshop helped identify principles, potential approaches, and strategies to advance the development or evolution of more harmonized regulatory standards. This document summarizes the workshop.
New Drug Development Mar 02 2020
Regulatory Aspects of Gene Therapy and Cell Therapy Products Jul 18 2021 This book discusses the different regulatory pathways for gene therapy (GT) and cell therapy (CT) medicinal products implemented by national and international bodies throughout the world (e.g. North and South America, Europe, and Asia). Each chapter, authored by experts from various regulatory bodies throughout the international community, walks the reader through the applications of nonclinical research to translational clinical research to licensure for these innovative products. More specifically, each chapter offers insights into fundamental considerations that are essential for developers of CT and GT products, in the areas of product manufacturing, pharmacology and toxicology, and clinical trial design, as well as pertinent "must-know" guidelines and regulations. Regulatory Aspects of Gene Therapy and Cell Therapy Products: A Global Perspective is part of the American Society of Gene and Cell Therapy sub-series of the highly successful Advances in Experimental Medicine and Biology series. It is essential reading for graduate students, clinicians, and researchers interested in gene and cell therapy and the regulation of pharmaceuticals.
Accelerated Predictive Stability (APS) May 04 2020 Accelerated Predictive Stability (APS): Fundamentals and Pharmaceutical Industry Practices provides coverage of both the fundamental principles and pharmaceutical industry applications of the APS approach. Fundamental chapters explain the scientific basis of the APS approach, while case study chapters from many innovative pharmaceutical companies provide a thorough overview of the current status of APS applications in the pharmaceutical industry. In addition, up-to-date experiences in utilizing APS data for regulatory submissions in many regions and countries highlight the potential of APS in support of registration stability testing for certain regulatory

submissions. This book provides high level strategies for the successful implementation of APS in a pharmaceutical company. It offers scientists and regulators a comprehensive resource on how the pharmaceutical industry can enhance their understanding of a product's stability and predict drug expiry more accurately and quickly. Provides a comprehensive, one-stop-shop resource for accelerated predictive stability (APS) Presents the scientific basis of different APS models Includes the applications and utilities of APS that are demonstrated through numerous case studies Covers up-to-date regulatory experience

Guideline for the Format and Content of the Chemistry, Manufacturing, and Controls Section of an Application Oct 28 2019

A Lifecycle Approach to Knowledge Excellence in the Biopharmaceutical Industry Jul 06 2020 This book addresses the rapidly emerging field of Knowledge Management in the pharmaceutical, medical devices and medical diagnostics industries. In particular, it explores the role that Knowledge Management can play in ensuring the delivery of safe and effective products to patients. The book also provides good practice examples of how the effective use of an organisation's knowledge assets can provide a path towards business excellence.

Rare Diseases and Orphan Products Aug 07 2020 Rare diseases collectively affect millions of Americans of all ages, but developing drugs and medical devices to prevent, diagnose, and treat these conditions is challenging. The Institute of Medicine (IOM) recommends implementing an integrated national strategy to promote rare diseases research and product development.

Application of Project Management Principles to the Management of Pharmaceutical R&D Projects Feb 10 2021 Dr. Catalano has for the last ten years been doing consulting for the Pharmaceutical Industry. During his consulting he discovered that small businesses such as, generic, startups, and virtual companies do not have the budget or the resources to apply the computer software utilized in project management and therefore do not apply project management principles in their business model. This reduces their effectiveness and increases their operating cost. Application of Project Management Principles to the Management of Pharmaceutical R&D Projects is presented as a paper-based system for completing all the critical activities needed apply the project management system. This will allow these small business to take advantage of the project management principles and gain all the advantages of the system. This book will be beneficial for beginners to understand the concepts of project management and for small pharmaceutical companies to apply the principles of project management to their business model.

The Challenge of CMC Regulatory Compliance for Biopharmaceuticals Dec 03 2022 "The greater our knowledge increases, the more our ignorance unfolds. " U. S. President John F. Kennedy, speech, Rice University, September 12, 1962 My primary purpose for writing this book was much more than to provide another information source on Chemistry, Manufacturing & Controls (CMC) that would rapidly become out of date. My primary purpose was to provide insight and practical suggestions into a common sense business approach to manage the CMC regulatory compliance requirements for biopharmaceuticals. Such a common sense business approach would need (1) to be applicable for all types of biopharmaceutical products both present and future, (2) to address the needs of a biopharmaceutical manufacturer from the beginning to the end of the clinical development stages and including post market approval, and (3) to be adaptable to the constantly changing CMC regulatory compliance requirements and guidance. Trying to accomplish this task was a humbling experience for this author! In Chapter 1, the CMC regulatory process is explained, the breadth of products included under the umbrella ofbiopharmaceuticals are identified, and the track record for the pharmaceutical and biopharmaceutical industry in meeting CMC regulatory compliance is discussed. In Chapter 2, while there are many CMC commonalities between biopharmaceuticals and chemically-synthesized pharmaceuticals, the significant differences in the way the regulatory agencies handle them are examined and the reasons for why such differences are necessary is discussed. Also, the importance of CMC FDA is stressed.

Biosimilars Aug 26 2019 This book provides a comprehensive overview of the biosimilar regulatory framework, the development process and clinical aspects for development of biosimilars. The development path of a biosimilar is just as unique as a development path of a new drug, tailored by the mechanism of action, the quality of the molecule, published information on the reference product, the current competitive environment, the target market and regulatory guidance, and most importantly, the emerging totality of evidence for the proposed biosimilar during development. For the ease of readers, the book comprises of six sections as follows: Section I: Business, Health Economics and Intellectual Property Landscape for Biosimilars Section II: Regulatory Aspects of Development and Approval for Biosimilars Section III: Biopharmaceutical Development and Manufacturing of Biosimilars Section IV: Analytical Similarity Considerations for Biosimilars Section V: Clinical aspects of Biosimilar Development Section VI: Biosimilars- Global Development and Clinical Experience Chapters have been written by one or more experts from academia, industry or regulatory agencies who have been involved with one or more aspects of biosimilar product development. The authors and editors have an expertise in commercialization and pricing of biosimilars, intellectual property considerations for biosimilars, chemistry manufacturing controls (CMC) and analytical development for biosimilars, regulatory and clinical aspects of biosimilar development. Besides the industry practitioners, the book includes several contributions from regulators across the globe.

Developing Solid Oral Dosage Forms Apr 02 2020 Developing Solid Oral Dosage Forms is intended for pharmaceutical professionals engaged in research and development of oral dosage forms. It covers essential principles of physical pharmacy, biopharmaceutics and industrial pharmacy as well as various aspects of state-of-the-art techniques and approaches in pharmaceutical sciences and technologies along with examples and/or case studies in product development. The objective of this book is to offer updated (or current) knowledge and skills required for rational oral product design and development. The specific goals are to provide readers with: Basics of modern theories of physical pharmacy, biopharmaceutics and

industrial pharmacy and their applications throughout the entire process of research and development of oral dosage forms Tools and approaches of preformulation investigation, formulation/process design, characterization and scale-up in pharmaceutical sciences and technologies New developments, challenges, trends, opportunities, intellectual property issues and regulations in solid product development The first book (ever) that provides comprehensive and in-depth coverage of what's required for developing high quality pharmaceutical products to meet international standards It covers a broad scope of topics that encompass the entire spectrum of solid dosage form development for the global market, including the most updated science and technologies, practice, applications, regulation, intellectual property protection and new development trends with case studies in every chapter A strong team of more than 50 well-established authors/co-authors of diverse background, knowledge, skills and experience from industry, academia and regulatory agencies

The Challenge of CMC Regulatory Compliance for Biopharmaceuticals Jul 30 2022 Biopharmaceuticals (i.e., biological medicines sourced from genetically-engineered living systems) for treatment of human diseases have become a significant percentage of the pharmaceutical industry. And not just the recombinant DNA-derived proteins and monoclonal antibodies (both from the innovators and biosimilars); but now, an increasing awareness of the importance of gene therapy and genetically engineered cellular medicinal products. These biopharmaceuticals are being developed by many companies whose Chemistry, Manufacturing & Control (CMC) teams have varying degrees of familiarity or experience with the CMC strategy and regulatory compliance requirements for these challenging products. Companies clearly plan out the strategy for their clinical study plans, but frequently, the development of a strategy for CMC is an afterthought. Coupled with the complexity of the biopharmaceutical manufacturing processes and products, and this can be a recipe for disaster. The third edition of this book provides insights and practical guidance for the CMC teams to develop an acceptable cost-effective, risk-based CMC regulatory compliance strategy for all biopharmaceuticals (recombinant proteins, monoclonal antibodies, genetically engineered viruses and genetically engineered human cells) from early clinical stage development through market approval. The third edition of this book provides added coverage for the biosimilars, antibody drug conjugates (ADCs), bispecific antibodies, genetically engineered viruses, and genetically engineered cells. This third edition of the book also addresses the heightened pressure on CMC regulatory compliance timelines due to the introduction of expedited clinical pathways moving the clinical development closer to a seamless phase process (e.g., FDA Breakthrough Therapy designation, CBER Regenerative Medicine Advanced Therapy (RMAT) designation, EMA Priority Medicines (PRIME) designation). The Challenge of CMC Regulatory Compliance for Biopharmaceuticals is essential, practical information for all pharmaceutical development scientists, Manufacturing and Quality Unit staff, Regulatory Affairs personnel, and senior management involved in the manufacture of biopharmaceuticals.

Medical Product Regulatory Affairs Jan 24 2022 Written in a clear and concise style by an experienced author, this attractively-priced book covers regulatory affairs in all major global markets for pharmaceuticals and medical devices, making it the most comprehensive in its field. Following a look at drug development, complete sections are devoted to national and EU regulatory issues, manufacturing license application and retention, and regulation in the USA. Other topics dealt with include CDER, CBER and marketing and manufacturing licenses, the ICH process and Good Laboratory/Clinical/Manufacturing Practices. Everything pharmacologists, bioengineers, pharma engineers, students in pharmacy and those working in the pharmaceutical industry need to know about medical regulatory affairs.

Regulatory Toxicology Jan 30 2020 This book will be written by experts for professionals, scientists and all those involved in toxicological data generation and decision-making. It is the updated and expanded version of a monograph published in German in 2004. Chemical safety is regulated on various levels including production, storage, transport, handling, disposal or labelling. This book deals comprehensively with the safety-ensuring methods and concepts employed by regulatory agencies, industry and academics. Toxicologists use experimental and scientific approaches for data collection, e.g. about chemical hazards, physicochemical features or toxicokinetics. The respective experimental methods are described in the book. Toxicologists also deal with much insecurity in the exposure and effect scenarios during risk assessment. To overcome these, they have different extrapolation methods and estimation procedures at their disposal. The book describes these methods in an accessible manner. Differing concepts from one regulation area to another are also covered. Reasons and consequences become evident when reading the book. Altogether, the book Regulatory Toxicology will serve as an excellent reference.

Dermal Drug Delivery Oct 21 2021 With the continued advancement of better-quality control and patient outcome reporting systems, changes in the development, control, and regulation of all pharmaceutical delivery systems including transdermal and topical products have been happening on a continuous basis. In light of various quality issues that have been reported by patients and practitioners resulting in the recall or removal of products from the market, both the pharmaceutical industries and regulatory agencies have been adopting new measures to address these issues. With chapters written by experts in this field, this book takes a 21st century multidisciplinary and cross-functional look at these dosage forms to improve the development, design, manufacturing, quality, clinical performance, safety, and regulation of these products. This book offers a wealth of up-to-date information organized in a logical sequence corresponding to various stages of research, development, and commercialization of dermal drug delivery products. The authors have been carefully selected from different sectors of pharmaceutical science for their expertise in their selected areas to present objectively a balanced view of the current state of these products development and commercialization via regulatory approval. Their insights will provide useful information to others to ensure the successful development of the next generation dermal drug products. Key Features: Presents current advancements including new technologies of transdermal and topical dosage forms. Presents challenges in the development of the new generation of transdermal and topical dosage forms. Introduces new technologies and QbD (quality by design) aspects of manufacturing and control strategies. Includes new perspectives on pre-clinical and clinical development, regulatory considerations, safety and quality. Discusses regulatory challenges, gaps, and future considerations for dermal drug delivery systems.

Making Monoclonal Antobodies Nov 29 2019 This book provides a general description of monoclonal antibody manufacturing process. The content of this book is consistent with the structure of regulatory filing Module 3 (Quality) - CMC (Chemistry, Manufacturing and Control). This book also discussed QbD (Quality by design) in Drug Substance process development.
Global Pharmaceutical and Biologics Regulatory Strategy, Second Edition Aug 31 2022