With a key focus on recent developments and advances in the field, this book provides in-depth coverage of topics fundamental to the development of targeted therapeutics. The expansion of targeted modalities in rapidly evolving therapeutic areas, such as immune-ecology, and developments with respect to combination therapies, novel toxicities, and the therapeutic application of antibodies has been accelerated. Additional emphasis is placed upon topical information, with a special section discussing the Development of Antibody-Based Therapeutics: Translational Considerations, representing a comprehensive evaluation of progress in the field, which sits alongside the first edition to inform, in detail, professionals, including researchers, practitioners, and students, as well as with the provision of ‘points to consider’ for the reader as a value-added feature of the volume. All contributors are experts in their fields and have played pivotal roles in the creation of the technology.

In recent years there has been a widespread implementation of a new generation of hematologist analyzers in the laboratory. These modern cell-counters have contributed significantly to our ability to automatically and precisely measure a variety of characteristics in different cell types, including leukocyte sub-classes which were previously determined only microscopically. With this revolution in the technology, we have been enabled to improve the quality of care and there is considerable potential to further improve the technology.

The book provides an overview of the current trends in biotechnology and medicinal plant sciences. It includes detailed chapters on various advance biotechnological tools involved in production of phytochemicals, natural products, plant medicinal and novel research developments and novel research developments from various geographical regions of the world have also been included. These studies report the antimicrobial activity of various natural product plants against various pathogens and agents. Strains of microorganisms and agents from various geographical regions have also been used in this study. The book presents the literature of the importance of natural agents and their use in the development of new drugs for the treatment of infectious diseases and cancer.

Information about histocompatibility antigens is expanding so rapidly that it is difficult to remain abreast. In these volumes, we have made an effort to bring together the most current advances, such as the realization that the serum from animals immunized with toxins, for example, diphtheria toxin or viruses, is an effective therapeutic against the disease caused by the same agent in humans. In the 1880s, von Behring developed an antitoxin (antibody) that did not kill the bacteria but neutralized the bacterial toxin. The first Nobel Prize in Medicine (1901) was given to Behring and Shibasaburo Kitasato for their contributions to this area. Much of the research in this field was done by the late 19th century. The scientific contributions of Kikunae Ikeda are discussed in this book. Ikeda's discovery of monosodium glutamate (MSG) is regarded as one of the most important contributions to the food industry. The book provides an overview of the current trends in biotechnology and medicinal plant sciences. The work includes detailed chapters on various advance biotechnological tools involved in production of phytochemicals, natural products, plant medicinal and novel research developments and novel research developments from various geographical regions of the world have also been included. These studies report the antimicrobial activity of various natural product plants against various pathogens and agents. Strains of microorganisms and agents from various geographical regions have also been used in this study. The book presents the literature of the importance of natural agents and their use in the development of new drugs for the treatment of infectious diseases and cancer.
agents are presented. This Handbook of Targeted Delivery of Imaging Agents is a must-have reference for all those who need to stay abreast of the latest developments in this hot field.

This work covers the latest developments in diagnosis & treatment of this widespread disease. It integrates the knowledge & experience of renowned rheumatologists, neurologists, neurosurgeons, orthopedic surgeons & physical therapists.

Advances in genetics, molecular biology and gene delivery technologies in recent years have led to new gene therapy strategies for treatment of a variety of diseases. This book gives a comprehensive overview of the present status and future directions of gene delivery systems and therapeutic strategies for the clinical application of gene therapy in cancer, cardiovascular and central nervous system diseases. Stem cell-based therapies and gene expression regulatory systems as novel platform technologies for various gene therapy applications are also discussed. Leading experts give excellent overviews of basic molecular aspects and clinical applications in this new emerging biomedical field.

Antibody-drug conjugates (ADCs) stand at the verge of a transformation. Scores of clinical programs have yielded only a few regulatory approvals, but a wave of technological innovation now empowers us to overcome past technical challenges. This volume focuses on the next generation of ADCs and the innovations that will enable them. The book inspires the future by integrating the field’s history with novel strategies and cutting-edge technologies. While the book primarily addresses ADCs for solid tumors, the last chapter explores the emerging interest in using ADCs to treat other diseases. The therapeutic rationale of ADCs is strong: to direct small molecules to the desired site of action (and away from normal tissues) by conjugation to antibodies or other targeting moieties. However, the combination of small and large molecules imposes deep complexity to lead optimization, pharmacokinetics, toxicology, analytics and manufacturing. The field has made significant advances in all of these areas by improving target selection, ADC design, manufacturing methods and clinical strategies. These innovations will inspire and educate scientists who are designing next-generation ADCs with the potential to transform the lives of patients.

This book review series presents current trends in modern biotechnology. The aim is to cover all aspects of this interdisciplinary technology where knowledge, methods and expertise are required from chemistry, biochemistry, microbiology, genetics, chemical engineering and computer science. Volumes are organized topically and provide a comprehensive discussion of developments in the respective field over the past 3-5 years. The series also discusses new discoveries and applications. Special volumes are dedicated to selected topics which focus on new biotechnological products and new processes for their synthesis and purification. In general, special volumes are edited by well-known guest editors. The series editor and publisher will however always be pleased to receive suggestions and supplementary information. Manuscripts are accepted in English.

The field of antibody engineering has become a vital and integral part of making new, improved next generation therapeutic monoclonal antibodies, of which there are currently more than 300 in clinical trials across several therapeutic areas. Therapeutic antibody engineering examines all aspects of engineering monoclonal antibodies and analyses the effect that various genetic engineering approaches will have on future candidates. Chapters in the first part of the book provide an introduction to monoclonal antibodies, their discovery and development and the fundamental technologies used in their production. Following chapters cover a number of specific issues relating to different aspects of antibody engineering, including variable chain engineering, targets and mechanisms of action, classes of antibody and the use of antibody fragments, among many other topics. The last part of the book examines development issues, the interaction of human IgGs with non-human systems, and cell line development, before a conclusion looking at future issues affecting the field of therapeutic antibody engineering. Goes beyond the standard engineering issues covered by most books and delves into structure-function relationships and the development of knowledge across all areas of antibody engineering, development, and marketing. Discusses how current and future genetic engineering of cell lines will pave the way for much higher productivity.

The field of cancer diagnosis, prognosis, and treatment is constantly advancing. From novel biomarkers to cutting-edge imaging solutions, changing chemotherapy protocols and novel immunotherapeutic agents, medical teams develop and test new ways to manage this ever-growing threat to the modern age. Imaging has been a reliable method for initial diagnosis and later surveillance of premalignant and cancerous lesions of the digestive tract. This book project aims to characterize the main diagnostic procedures and novel medical and surgical treatments, as well as provide an updated view on current guidelines, premalignant lesions management, and minimally invasive curative techniques.

Monoclonal antibodies represent one of the fastest growing areas of new drug development within the pharmaceutical industry. Several blockbuster products have been approved over the past several years including Rituxan, Remicade, Avastin, Humira, and Herceptin. In addition, over 300 new drugs are currently in clinical trials. With both large, established biotechnology companies and small start-ups involved in the development of this important class of molecules, monoclonal antibodies products will become increasingly prevalent over the next decade. Recently the regulatory review of monoclonal antibodies has been moved from Center for Biologics and Research to the Center for Drug Evaluation and Research (CDER) division of the US Food and Drug Administration. It is anticipated that CDER will expect a certain minimal amount of data to be provided as more of these products move through the regulatory pipeline. Current Trends in Monoclonal Antibody Development and Manufacturing will provide readers with an understanding of what is currently being done in the industry to develop, manufacture, and release monoclonal antibody products and what will be required for a successful regulatory submission.

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