

the cytokine handbook

[#cytokines](#) [#immunology](#) [#cell signaling](#) [#biological reference](#) [#inflammation](#)

This comprehensive cytokine handbook serves as an essential guide for understanding the intricate roles of cytokines in immunology, cell signaling, and inflammatory responses. It offers in-depth information on their structure, function, and therapeutic potential, making it an invaluable resource for researchers, students, and professionals in molecular biology and medicine.

Our thesis archive continues to grow with new academic contributions every semester.

We sincerely thank you for visiting our website.

The document Cytokine Handbook Guide is now available for you.

Downloading it is free, quick, and simple.

All of our documents are provided in their original form.

You don't need to worry about quality or authenticity.

We always maintain integrity in our information sources.

We hope this document brings you great benefit.

Stay updated with more resources from our website.

Thank you for your trust.

Thousands of users seek this document in digital collections online.

You are fortunate to arrive at the correct source.

Here you can access the full version Cytokine Handbook Guide without any cost.

The Cytokine Handbook, Two-Volume Set

The fourth edition of The Cytokine Handbook provides an encyclopedic coverage of the molecules that induce and regulate immune responses. Now expanded to two volumes, co-edited by Michael T Lotze, and written by over 120 international experts, the scope of the book has been broadened to include a major emphasis on the clinical applications of cytokines. The early chapters discuss individual cytokines, chemokines and receptors. Additional chapters discuss the clinical implications and applications of cytokines, including cytokine gene transfer, antisense therapy and assay systems. This book is essential for researchers and clinicians interested in cytokines, including anyone working in cancer biology, transplantation, infectious diseases, autoimmunity or bioinformatics. Key Features

- * Covers all main cytokines and chemokines
- * Written by experts
- * Up-to-date- includes detailed referencing accessing current, modern literature and reflects the newest findings from the human genome
- * The new edition has been thoroughly revised and extended (now 2 volumes) as compared to the last edition, including new co-editor (MTL), new authors, new hot topics and new chapters
- * Includes major emphasis on clinical applications
- * Extensively illustrated with tables and figures

The Cytokine Handbook

The fourth edition of The Cytokine Handbook provides an encyclopedic coverage of the molecules that induce and regulate immune responses. Expanded to two volumes, the scope of the book has been broadened to include a major emphasis on the clinical applications of cytokines. The early chapters discuss individual cytokines, chemokines and receptors. Additional chapters discuss the clinical implications and applications of cytokines, including cytokine gene transfer, antisense therapy and assay systems.

The cytokine handbook. 2

A comprehensive review of what is known about the role of cytokines and chemokines in a variety of human infectious diseases, including gram-negative and -positive infections, listeriosis, mycobacterial infections, lyme arthritis, pneumonia, fungal infections, HIV, leishmaniasis, and sepsis. The authors

demonstrate the different cytokine and chemokine production profiles in response to a wide variety of pathogens and the importance of host genetic factors in determining the type and magnitude of responses to a given microorganism. They also critically evaluate the use of cytokines and anticytokines in the treatment of infectious diseases and show how knowledge of cytokine pleiotropic effects, redundancy, and the complexity of the cytokine network has led to better design and better outcomes in cytokine-based therapies for specific infections.

Cytokines and Chemokines in Infectious Diseases Handbook

The Cytokines of the Immune System catalogs cytokines and links them to physiology and pathology, providing a welcome and hugely timely tool for scientists in all related fields. In cataloguing cytokines, it lists their potential for therapeutic use, links them to disease treatments needing further research and development, and shows their utility for learning about the immune system. This book offers a new approach in the study of cytokines by combining detailed guidebook-style cytokine description, disease linking, and presentation of immunologic roles. Supplies new ideas for basic and clinical research Provides cytokine descriptions in a guidebook-style, cataloging the origins, structures, functions, receptors, disease-linkage, and therapeutic potentials Offers a textbook-style view on the immune system with the immunologic role of each cytokine

The Cytokines of the Immune System

This book provides comprehensive coverage of the cytokines from a pharmacological approach. The chapters are presented in a consistent format allowing easy cross-reference, with sample diagrams and a summary table of essential facts for each chapter at the end of the book. Cytokines is unique in stressing cytokine biology and the application of research data to provide disease therapy. With 33 detailed and up-to-date chapters about individual cytokines, this comprehensive reference will provide both clinicians and researchers in immunology and pharmacology with invaluable information. Genetic information and sequences Protein structure Cell sources and production Biological activity Cytokine receptor structure and signal transduction Discussion of the role of cytokines in disease and the potential for therapy Summary table of essential facts Comprehensive bibliography

Cytokines

How do you keep track of basic information on the proteins you work with? Where do you find details of their physicochemical properties, amino acid sequences, gene organization? Are you tired of scanning review articles, primary papers and databases to locate that elusive fact? The Academic Press FactsBook series will satisfy scientists and clinical researchers suffering from information overload. Each volume provides a catalogue of the essential properties of families of molecules. Gene organization, amino acid sequences, physicochemical properties, and biological activity are presented using a common, easy-to-follow format. Taken together they compile everything you wanted to know about proteins but were too busy to look for. More than 45 entries on human and murine cytokines and their receptors, including: * Cytokine receptor superfamilies * Interleukins 1-15 * Other cytokines * Additional information is provided on: * Alternative nomenclature * Cross reactivity * Sources * Bio assays * Physicochemical properties of the cytokines and their receptors * 3-D structure * Gene structure and chromosomal localisation * Amino acid sequences of the cytokines and their receptors * Receptors * Receptor distribution * Signal transduction * Chromosomal location of the receptors * References

Human Cytokines

This book explores the major cytokines, such as IL-1 and IFN- γ , with respect to the regulation of their gene expression and protein production in specific immune cell types. It discusses both healthy physiological settings and in pathological situations in which the expression of some cytokines could be dysregulated, resulting in either immunodeficiency or exacerbated inflammatory sequelae in animal models as well as in human patients. Cytokines are important regulators of immune responses that require the highly coordinated participation and communication of multiple cell types. The expression of cytokines by various producer cell types is therefore carefully regulated in response to environmental cues at multiple levels: transcription, translation and posttranslational modification. Presenting cutting-edge advances in our understanding of the regulation of cytokine expression, this book is a valuable resource for anyone involved or interested in immune regulation.

Human Cytokines

Cytokine Effector Functions in Tissues discusses the cytokines networks in the context of the specific-tissue environment. It is an up-to-date collection of articles that addresses the specific issue of how the cytokines are able to condition tissue specific homeostasis. The book helps the reader understand how cytokines network inside the tissues and highlights whether tissue-protection or exacerbation will be finally controlled. It describes the cytokines detected and regulated in different tissues, such as the brain, lungs, spleen, liver, pancreas and intestine, also addressing the issue of timing in specific cell types. Categorizes the cytokines based primarily on tissue and target cells Emphasizes different roles and outcomes observed during innate and adaptive response Represents a rapid guide to cytokines in health and disease in tissue and organ context Presents a different view on how known mediators may work if analyzed in a different perspective, determining the final outcome on tissue-specific target cells

The Cytokine Factsbook

This book guides the reader through the latest research on the cytokine network, covering signaling pathways, control of the immune response, and potential therapeutics. Different cytokines stimulate diverse responses in various phases of inflammation and immunity, including the innate immune response, the generation of effector T cells, and the development of antibodies by the humoral immune system. It is now clear that the pathophysiology of many infectious, autoimmune, allergic, and malignant diseases can be largely explained by which cytokines are induced and subsequently regulate the cellular responses. In clinical medicine, cytokines are involved in a wide spectrum of diseases. This book describes in three parts the properties and roles of 15 key cytokines under physiological and pathological conditions. Part I presents nine cytokines associated with inflammatory disorders, pro-inflammatory cytokines, and the recently identified new helper T (Th) subset: Th17 cells. Part II gives details of three cytokines associated with allergic disorders, including Th2 responses and recently identified types of innate cells. Part III describes three cytokines that are associated with immunological tolerance and anti-inflammation, including regulatory T (Treg) cells, IL-10-producing Treg (Tr1) cells, and inducible IL-35-producing Treg (iT35) cells. Cytokines are considered to be important as therapeutic targets for specific agonists or antagonists in numerous immune and inflammatory diseases. The ultimate goal of this book is to facilitate the development of therapeutic treatments for such diseases which has been limited by an insufficient understanding of the biology of cytokines and the complicated network that they create.

Regulation of Cytokine Gene Expression in Immunity and Diseases

The role of the cytokine, macrophage migration inhibitory factor (MIF), in the immune response and in the immunopathogenesis of different inflammatory, autoimmune, and infectious disorders is now well established. The aim of this handbook is to provide an authoritative volume covering all aspects of MIF, from basic molecular biology to structure-function relationships, pathophysiology, genetics, and drug development. Recent studies continue to broaden considerably the role of MIF in both normal physiology and pathology, which range from such diverse areas as oncogenesis, cardiac physiology, and neurodevelopment. MIF's molecular mechanism of action in these contexts is becoming increasingly understood and the role of variant MIF alleles in different conditions continues to be defined. Unique structural features of the protein, such as an intrinsic catalytic activity, and the continuing elucidation of its receptor-dependent mechanism of action offer attractive opportunities for therapeutic intervention. This volume will provide a comprehensive synthesis of the state of the art of MIF science.

Cytokine Effector Functions in Tissues

The immune system recruits a wide range of molecule groups and categories, each of which has its own function, property, and structure. Among these, interleukins play a pivotal role in supporting the immune and non-immune systems of the human body. Interleukins as effective cytokines participate in different conditions such as homeostasis, infectious diseases, autoimmune diseases, and cancers. This unique property of interleukins makes them invaluable biomarkers that can be used as important biosensors. This book is divided into three sections: "Interleukins' Classification and Evolutionary Features", "Autoimmune Diseases and Low Immune System", and "Cancer and Injuries". Chapters examine the role of various interleukins in conditions such as leukemia, rheumatoid arthritis, and allergic and autoimmune diseases.

Cytokine Frontiers

Cytokines are soluble mediators of intercellular communication. They contribute to a chemical signalling language that regulates development, tissue repair, haemopoiesis, inflammation and the immune response. Potent cytokine polypeptides have pleiotropic activities and functional redundancy. They act in a complex network where one cytokine can influence the production of, and response to, many other cytokines. In the past five years, this bewildering array of more than 100 effector molecules and associated cell surface receptors has been simplified by study of cytokine and cytokine receptor structure; elucidation of convergent intracellular signalling pathways; and molecular genetics, and targeted gene disruption to 'knock-out' production of individual cytokines in mice. It is also now clear that the pathophysiology of infectious, autoimmune and malignant disease can be partially explained by the induction of cytokines and the subsequent cellular response. Viral homologues exist for many cytokines and receptors and genetic variations in cytokine production may influence response to pathogenic stimuli. Cytokine and cytokine antagonists have shown therapeutic potential in a number of chronic and acute diseases. The Cytokine Network: Frontiers in Molecular Biology is not a survey of individual cytokines, but guides the reader through the latest research on the cytokine network as a whole covering genomics, signalling pathways, control of the immune response, and therapeutics.

Human Cytokines

Cytokines are pleiotropic regulatory proteins involved in essentially all biological processes and associated with a wide variety of diseases, including inflammatory disorders as well as many types of cancer and leukemia. Knowledge about the quantitative and qualitative nature of cytokine production is critical in the understanding of normal and pathological processes. The cytokine detection in biological and clinical samples faces many challenges including their low abundance, the need to distinguish between active and latent cytokine forms, and the need to measure multiple cytokines in a single assay. This volume will provide a comprehensive collection of classic and cutting-edge methodologies that are currently used to analyze and quantify cytokines and their biological activities in complex biological and clinical samples. The chapters are divided into four main categories. The first group focuses on the immunodetection of released cytokines in tissue culture supernatants, plasma, serum and whole blood samples by immunoassays. These immunoassays measure the total concentrations of released cytokines regardless of their biological activity and include ELISA, flow cytometry, ELISPOT and the antibody-based proximity ligation. The second group will focus on the analysis of biologically active cytokines by bioassays using neutralizing antibodies, chemotaxis assay, cytokine-induced cell degranulation assay, cell proliferation and differentiation, cytokine-induced cytokine production and the radioreceptor cytokine assay. The third group focuses on the analysis of intracellular cytokines by flow cytometry, western blotting and fluorescence and confocal microscopy. In addition, this category includes protocols for quantitative analysis of cytokine gene expression by real time RT-PCR and analysis of the cytokine promoter occupancy by chromatin immunoprecipitation. The fourth group focuses on the recently developed multiplex arrays that can measure multiple cytokines in the same sample at the same time. This group includes quantification of multiple cytokines using cytometric bead arrays, ELISPOT assays, proteomics cytokine evaluation, multiplexed proximity ligation assays for high-throughput cytokine analysis and finally, cytokine gene expression analysis by gene arrays. The protocols will be written by experienced basic and clinical researchers with hands-on knowledge of the described protocols. By covering a broad variety of methods used in cytokine detection and analysis, this book will be of interest not only to biochemists, molecular biologists and immunologists but also to physician-scientists working in the field of cytokine research.

The MIF Handbook

In Cytokines and the CNS, leading practicing physicians and scientists review the current status of cytokines, with an emphasis on their role in developmental and pathological processes in the central nervous system (CNS). They describe various cytokine families and their receptors, focusing on the delineation of known mechanisms by which ligand-receptor interactions mediate biological effects. The book also emphasizes interactions between cytokines and other biological regulators at the cellular and molecular level, and considers in detail tissue-specific effects exerted on CNS cells by cytokines. Cytokine regulation of CNS development also is discussed. With this background, Cytokines and the CNS then explores how cytokine action may be implicated in various human disease processes, including inflammation, neoplasia, degeneration, and the neurological manifestations of HIV infection. This book features cutting-edge information in this rapidly expanding area of investigation - the result of

explosive growth in the understanding of cytokines' role in hematopoiesis, inflammation, and immunity, combined with tremendous advances in the identification and characterization of neurotrophic factors. Cytokines and the CNS contains chapters by practicing researchers from the fields of neurobiology and immunology/hematopoiesis, and presents both practical and conceptual information.

Interleukins

Enzyme-linked immunospot assay (ELISPOT) has been known for some time as a unique state-of-the-art technique for studying the cytokine-secreting activity of immune system cells, and it appears to be one of the fast growing applications in biomedical research, becoming an indispensable tool in vaccine development, HIV research, transplantation studies, and cancer and allergy research. The second edition of Handbook of ELISPOT: Methods and Protocols, only the second book in the field which is entirely dedicated to ELISPOT assay, shares the detailed techniques that have been developed since the release of the popular first edition. Straight from the labs of seasoned experts, this book covers setting and performing ELISPOT assays, ELISPOT for veterinary research, advanced ELISPOT techniques, image and data analysis, as well as vaccine development and diagnostics. Written in the highly successful Methods in Molecular BiologyTM series format, chapters include introductions to their respective chapters, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and cutting-edge, Handbook of ELISPOT: Methods and Protocols, Second Edition serves as a compilation of a technical reference and a troubleshooting guide for researchers, both experienced and novice, worldwide in order to advance the usage of this key tool.

The Cytokine Network

Completely revised and expanded, this second edition of The Cytokine FactsBook is the most up-to-date reference manual available for all current well-characterized interleukins, cytokines, and their receptors. An additional 52 cytokines are included, doubling the number of entries from the previous edition. The key properties of each cytokine are described and presented in a very accessible format with diagrams for each of the receptors. The Cytokine FactsBook includes free online access to the regularly updated Cytokine Webfacts. Cytokine Webfacts is a web-based comprehensive compendium of facts about cytokines and their receptors that includes a variety of data representations, such as text, signal pathway diagrams and 3D images. This exciting resource is integrated into other databases via hypertext links to provide a unique network, and contains a web-enabled version of RasMol for viewing structures.

Cytokine Bioassays

Cytokine Storm Syndromes, including HLH and MAS, are frequently fatal disorders, particularly if not recognized early and treated during presentation. The genetics of Cytokine Storm Syndromes are being defined with many of the risk alleles giving rise to mutations in the perforin-mediated cytolytic pathway used by CD8 cytotoxic T cells and natural killer cells. These are being studied using murine models. Up to 10% of the general population may carry risk alleles for developing Cytokine Storm Syndromes, and Cytokine Storm Syndromes are being increasingly recognized around the world in pediatric and adult hospitals. A variety of infectious, rheumatic, and oncologic triggers are commonly associated with Cytokine Storm Syndromes, but understanding this disorder is critical for all researchers and physicians to ensure timely and appropriate therapy. This textbook, the first of its kind, addresses all aspects of the disorder – from genetics, pathophysiology, and ongoing research, to clinical presentations, risk factors, and treatment.

Cytokines and the CNS

My personal history in the field of cytokines had an initial period of several years during which my student and then colleague, Werner Muller, tried in vain to attract me to them. My interest always vanished when I was confronted with complex data pointing to functional redundancy of cytokines in cell culture systems. When gene targeting in the mouse germline became possible, this frustration came to an end. We and others immediately embarked on analyzing the in vivo function of cytokines and the problem of functional redundancy with this powerful new approach. The early cytokine gene knockouts performed by colleagues in Wiirzburg (IL-2) and by ourselves (IL-4 and IL-10) seemed to give clear answers and at the same time led to surprises: Each of these cytokines apparently had its own special and irreplaceable function, and this function could be quite distinct from what had been

anticipated from functional experiments in vitro. Although the latter finding is of course a wonderful incentive for further research, the former is pleasing in a general sense since it highlights the value of each of those one hundred thousand genes or so in our genome, cherished by evolution to become respectable members of the community. Even in the present era of "genomics" there will be no way around the careful functional analysis of each gene by itself.

Handbook of ELISPOT

Cytokines are important mediators of immunity, inflammation, and cell growth and are relevant to many areas of biomedical research. This book, now in its second edition, provides detailed up-to-date practical information for the study of cytokines and their receptors, including guides to many of the most useful current techniques in cell and molecular biology, immunology, and biochemistry. In all it contains 184 protocols, providing a comprehensive resource for researchers in many disciplines of biomedical research. This book will be essential for graduate students, researchers and professionals in immunology, infectious diseases, autoimmunity, oncology and biomedical research.

The Cytokine Factsbook and Webfacts

The book "Cytokines and Their Therapeutic Potential" comprises of five chapters and describes the origin, production and scope of cytokines, which are the most important molecules of immune system around which the field of functional immunology revolves. This book describes how the immune system responds to injuries and insults by foreign antigens (bacteria, viruses etc.) and produces cytokines, which then, through various immune response mechanisms, protect the body against pathogenic invasions, how these glycoproteins are involved in the differentiation and maturation of immune cells, how lymph nodes are involved in concentrating the different forms of cytokines, how immunogenicity of a cytokine is affected and how a cytokine is related to the immune response. Various types of cytokines and the organization and expression of cytokine receptors are described separately. The properties, mechanistic function and therapeutic cytokines are also discussed in separate chapters. The characteristics, production and important roles played by different cytokines in research, diagnostics and therapeutics is described separately. Lastly the role of cytokines and chemokines in infectious diseases and their importance in the detection of various kinds of diseases like cancer, HIV-AIDS, tuberculosis, malaria etc. are discussed in detail separately. The book contains a reasonable number of diagrams, flowcharts and tables. Besides this, various interesting and self-explanatory illustrations are incorporated to make the book useful to the students for whom it is written. The question bank, which includes long answer type, short answer type and multiple choice questions with their answers at the very end of each chapter, is developed to get a full grasp of the topic.

Cytokine Storm Syndrome

"Cytokine and Chemokine Networks in Cancer" provides a comprehensive exploration of the roles of cytokines and chemokines in cancer biology. It offers valuable insights into their diagnostic, prognostic, and therapeutic implications, making it a valuable resource for researchers, clinicians, and students interested in the field of cancer immunology and therapy. This book illustrates the importance and significance of the cytokine and chemokine signaling networks in tumor development and progression. It describes the complex networks mediated by cytokine and chemokine receptors promoting tumor cell proliferation, site-directed metastasis, and activation of angiogenic switch in tumor cells. The book also sheds light on the heterogeneity of cytokines and chemokines in solid malignancies and their impact on tumor progression and therapeutic outcomes. The chapters provide current information about the types of cytokine-chemokine interactions in promoting cancer stem cell-like characteristics, epithelial to mesenchymal transition, and modulation of the tumor microenvironment. The significance of the complex interactions in cancer biology in the light of therapeutic resistance is also highlighted. The chapters also describe recent advancements in the therapeutic potential of targeting the pro-tumor cytokine and chemokine networks and limiting tumor cell metastasis. Finally, the book also provides a comprehensive yet representative description of a large number of challenges associated with targeting these vital chemokine-cytokine networks. Given its content, the book provides valuable information for researchers in the field of cancer biology and molecular medicine.

Cytokine Knockouts

Over the past ten years, a number of cytokines and growth factors have proven to be as effective therapeutics. While these products have certainly established recombinant biologics as a major phar-

maceutical growth sector, the continued interest in this class of drugs arises from the fact that today we have a far better understanding of the human immune response, both at a cellular and molecular level. This has resulted in a more methodical characterisation of these factors which has given clinical researchers an opportunity to plan Phase 1 clinical trials that can provide substantial information on the activity of the cytokine in humans. Currently, a great deal of effort is also being channelled into identifying cytokines from the various DNA databases. Our major objective for this book is to profile cytokines that have been recently identified. The therapeutic potential of these cytokines based on their known properties will be discussed by the authors. The main aim of this book is to provide...

The Cytokine Factsbook

Cytokines are polypeptide mediators which act as communication signals among cells of the immune system as well as among other cells and tissues in the body. They are a heterogeneous and complex group and include interferons, tumor necrosis factor and chemokines. They play a key role in homeostasis and in host defense and are involved in such inflammatory and autoimmune diseases such as rheumatoid arthritis as well as infectious diseases such as HIV infection and septic shock. Modulation of the production and action of cytokines, as well as their exploitation as therapeutic agents has been the object of intense and competitive research. This book overviews the field of cytokine research and describes the various approaches that have been taken to develop the pharmacology of these novel mediators. The pharmacology of cytokines is an exploding area which is entering the clinical arena. The book in the framework of the immunobiology of cytokines, examines the interactions with the cytokine system of a variety of compounds ranging from simple synthetic chemicals to biotechnological products. In addition to examining individual agents and approaches, the book examines the pathophysiology of individual body systems and analyzes specific contexts for the pathophysiology of these mediators as well as pharmacological approaches for their control.

Cytokines

The cytokines are a heterogeneous family of proteins that act via cell receptors to regulate & modify cell growth & maturation. This book focuses on those cytokines already known to have the greatest therapeutic potential & whose clinical applications have been tested.

Cytokines and Their Therapeutic Potential

Cytokine involvement in the immune system's response to stress is now very well documented. Cytokine activity has been implicated in a variety of mental and physical diseases, and has been shown to have a significant role in fueling the vicious circle of depression and illness. The first edition of *Cytokines: Stress and Immunity* pointed out

Cytokine and Chemokine Networks in Cancer

Focusing on all the major cytokine families, this reference book provides coverage of cytokine regulatory processes in the lung and other tissues and comprehensive descriptions of cytokine functions specific to the lung.; Discussing the diverse cytokine-binding proteins and the role of cytokines in tissue injury and repair processes and extracellular matrix regulations, the book supplies information on amino acid structure and gene regulatory sequences, examines the receptor biology of individual cytokines, illustrates cytokine interactions with their cognate receptors and surveys the phenotypic effects of individual cytokines on target cells. With over 2700 literature citations and figures, this book is a resource for pulmonologists, physiologists, immunologists, cell and molecular biologists, environmental toxicologists, oncologists, and graduate-level and medical school students in these disciplines.

New Cytokines as Potential Drugs

This book deals with the central role of cytokines in the generalized inflammatory response of the host as the consequence of severe infection/endotoxin action. International specialists cover several aspects in 20 chapters starting with the agents responsible (endotoxin, superantigens) and recognition during cytokine induction. Further chapters deal with the signal transduction cascade, its modulation due to sex or genetic polymorphism, and the possibilities and problems in detection (including surrogate markers). Major targets of actions are covered in the chapters on coagulation-/fibrinolysis, adherence molecules, vasoactive factors, apoptosis and metabolism. As not all actions of cytokines are beneficial, several chapters deal with the prevention of induction, modulation of the cytokine generation or scavenging

cytokines including gene therapy approaches. Models are necessary for obtaining pathophysiological information and for testing therapeutic approaches, and thus all chapters deal with experimental models as well as clinical trials. The reasons why these have failed so far are the subject of the final chapter.

Pharmacology of Cytokines

Cytokines have become established as key mediators of the signs and symptoms of inflammatory diseases such as arthritis, dermatitis, asthma and multiple sclerosis. Furthermore, they are involved in the cascade of events leading to cardiovascular shock and are major regulators of the function of immune cells. This book reviews recent advances in the development of new anti-inflammatory drugs. It addresses different therapeutic intervention possibilities for new drugs, such as the cellular source of cytokines, specific receptors which induce cytokine synthesis, intracellular regulators of cytokine gene induction and expression, secretion and activation of cytokines, cytokine receptors and signalling pathways from these receptors. Accordingly, experts were drawn from different backgrounds including academic research institutes, the pharmaceutical industry and clinical pharmacology. In each area, the opportunities for drug development are highlighted and, where possible, clinical data is reviewed.

Cytokine Therapy

This is a fully updated and revised edition of this handbook, with new sections covering the changing context of cancer care, quality and audit of services, loco-regional administration, and managing complications of chemotherapy. This text describes over 50 chemotherapeutic agents, cytokine and investigational drugs, in individual monographs. There is an expanded cytokines section, and a new section on adjuvant drugs. The text has been geared to changing demands, and takes account of the nature of pharmacists' involvement in drug administration in oncology. It also contains improvements which make it relevant to the international community.

Cytokines

The study of immunology encompasses a vast and ever-growing body of information that in some way or other incorporates most areas of medical biological research. As the body of information in the medical sciences continues to increase its rate of expansion, one of the greatest challenges to investigators will be to integrate this information in a manner that is intellectually fruitful and productive. Considering the intended scope of this text, we could not pretend to have gone too far toward achieving such an integration--and considering the pace of change, in its very best form a measured approximation of such lofty goals might be the most we could hope for. Nevertheless, in these pages we have sought to produce a collection of information that is at once concise and up-to-date regarding areas where important developments are impacting on the way we understand the vertebrate immune system. In addition, although the information is geared toward advanced study, we have discussed some basic elements and concepts that we hope make the text a useful resource for both the immunologist and the nonspecialist. The intention is to provide the researcher, clinician, or advanced undergraduate student with a brief overview of specific components of the immune system, and to provide a place from which to begin further detailed study if necessary. To this end, we made every effort to supply extensive referencing--although limitations in space prevented exhaustive or complete referencing in some cases.

Cytokines of the Lung

The driving force for research on cytokines has always been their clinical promise. Their biological properties suggested a key role in hematopoiesis, immunity, tumor genesis, hemostasis, vascularization, repair of connective tissues and integration of the immune system with the neuroendocrine system. Animal studies have shown that cytokines could be used as effective biotherapeutics with easily manageable and reversible toxicities. Clinical trials have confirmed these findings, culminating in the licensing of a number of the cytokines such as interferon alpha, interferon gamma, interleukin 2, erythropoietin, granulocyte colony stimulating factor, and granulocyte-macrophage colony stimulating factor. Many other cytokines are in clinical trials. This is the first comprehensive volume on the cytokines written primarily from a medical perspective. After presenting background information about the structure, production, assays and systemic effects of cytokines and their receptors, it is organized around diseases and organ systems. Infectious diseases, autoimmunity, immunodeficiency states, defective hematopoiesis, allergies, injury repair, cancer, vascular and skin diseases, and neurological disorders are all covered. This work reviews the role that cytokines play in the pathogenesis, diagnosis

and therapy of each disease. The authors assess both the current state of the art and the potential for future applications.

Cytokines in Severe Sepsis and Septic Shock

This work focuses on the impact of the cytokine network on the humoral immune response, as well as on its implications for the evolving field of cytokine-based medical therapeutics. Scientists interested in how cytokines regulate the production of antibody, and the selective expression of distinct antibody classes in response to microbial and other antigenic challenges now have a single, comprehensive and timely volume covering this complex field.

Novel Cytokine Inhibitors

Cytokines are well characterized molecules that control the communication between cells. Their importance in immunology is very critical for the control of the quantity and of the quality of each specific response against foreign antigens (virus, bacteria, ...). When the cytokine network is mis-regulated disease can appear (autoimmunity, immunodeficiencies like in AIDS or cancer). This comprehensive treatment of this exciting area of molecular medicine presents an informative description of the major cytokines together with coverage of their role in the different parts of the immune system and of their implication in immunopathology, and will be of great interest to medical researchers and academics in the field. Industrial researchers with an interest in immunology will also find this book useful.

The Cytotoxics Handbook

This important new book focuses on the involvement of cytokines in specific areas of inflammatory diseases, such as granulomatous responses, lung disease, hepatic dysfunction and the acute phase, arthritis and accompanying bone remodeling, neurogenic inflammation, and shock. The roles of GM-CSF, IL-6, IL-2, TGF β , EGF, and LIF are discussed, as well as the medical treatments that affect cytokine activity. The results of approaches important to the biotechnology and pharmaceutical industries, such as the search for endogenous biological response modifiers that control cytokine function or production, attempts to synthesize heterocyclic compounds in the organic chemistry lab, and research regarding second messenger pathways involved in IL-1 and TNF production are examined. This book will provide anyone in cytokine research, especially clinical investigators, pharmaceutical industry researchers, and academic research scientists, with important information on how cytokine research might be used.

Handbook of Immune Response Genes

The role of the cytokine macrophage migration inhibitory factor (MIF) in the immune response and in the immunopathogenesis of different inflammatory, autoimmune, and infectious disorders is now well-established. Recent studies continue to broaden considerably the role of MIF in both normal physiology and pathology, which range from such diverse areas as oncogenesis, metabolism, and cellular stress responses. MIF's molecular mechanism of action in these contexts is becoming increasingly understood and the role of variant MIF alleles in different conditions continues to be defined. New family members, such as D-dopachrome tautomerase, or MIF-2, and the closely homologous genes encoding by parasites have been defined and are being functionally characterized. MIF directed therapies also are entering clinical testing and ultimately may be applied in a pharmacogenomics manner. This book provides a comprehensive synthesis of the state-of-the-art of MIF science. The intended audience are post-graduate students and researchers in inflammation, innate immunity, immunology, and immunopathology.

Clinical Applications of Cytokines

Cytokine Regulation of Humoral Immunity