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# Cytokine Induced Cytokine Production By Cells

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Cytokines in Severe Sepsis and Septic Shock

Cytokines

Cytokine-Induced Killer Cells: Advances in Research and Application: 2011 Edition

Mechanisms for Vomitoxin-induced Cytokine Superinduction in Macrophages

Cytokines and B Lymphocytes

Cytokine Frontiers

Cytokine-Induced Killer Cells—Advances in Research and Application: 2012 Edition

Cooperation of Liver Cells in Health and Disease

Inflammatory Cytokines, Receptors, and Disease

New Advances on Cytokines

Cytokine Bioassays

Cytokines

Cytokines and Chemokines in Infectious Diseases Handbook

International Review of Experimental Pathology

The Cytokine Handbook, Two-Volume Set

Pharmacology of Cytokines

Cytokine-Induced Pathology

Secretion of Cytokines and Chemokines by Innate Immune Cells

Polyfunctional Cytokines

Cytokine Knockouts

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Modulating Cytokines as Treatment for Autoimmune Diseases and Cancer

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Principles of Cancer Biotherapy

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Cytokines and Pain

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Cytokines and Cytokine Receptors

Cytokine-Induced Tumor Immunogenicity

T-Cell Subsets and Cytokines Interplay in Infectious Diseases

Cytokines and Autoimmune Diseases

Interleukins

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## ANGELO GALLEGOS

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### **Cytokines in Severe Sepsis and Septic Shock**

Springer Science & Business Media

Over the past five years the major importance of cytokines in the regulation of the immune system has become established. This book is the first to review the role of these factors in the control of growth of differentiation of B lymphocytes and thus represents an up-to-date and timely overview of the B-cell response. For the immunologist, there are detailed accounts of the physiochemical properties of the relevant cytokines and their effect on B lymphocytes from the level of receptor signalling, through ontogeny, activation and proliferation to the expression of specific immunoglobulin isotypes. For the clinician, the involvement of cytokines in disease and normal immune response is discussed.

*Cytokines* Academic Press

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The word "sepsis" derives from the Greek meaning decay or rotteness. Traditionally this term has been used to describe the process of infection accompanied by the host's systemic inflammatory response. Based on that understanding, previous clinical studies have been designed to include only patients with positive blood cultures [1, 2]. However, the frequent occurrence of a septic response without the demonstration of microorganisms in the circulation has led to a new definition

and understanding of sepsis, mainly as the systemic response of the host to an often undetectable microbiological or non-microbiological process [3]. The general consensus is that cytokines are central to the inflammatory response, particularly in sepsis. It is now known that not only Gram-negative but also Gram positive, viral, and fungal infections initiate the complex cascades of cytokine release. Probably the most important aspect of bacterial action is the release of toxic bacterial products. In particular endotoxin from Gram-negative bacteria (see chapter by Schade) and super antigens (see chapter by Neumann and Holzmann), as well as pore-forming toxins [4] from Gram-positive bacteria, induce cytokine formation. The importance of this cytokine release is evident from both diagnostic and therapeutic (mostly experimental) studies, and the action of cytokines may be the key to our understanding of the pathophysiology of the sepsis syndrome.

Cytokine-Induced Killer Cells: Advances in Research and Application: 2011 Edition John Wiley & Sons

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 pharmaceutical 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...

*Mechanisms for Vomitoxin-induced Cytokine Superinduction in Macrophages*  
ScholarlyEditions

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.

**Cytokines and B Lymphocytes** Oxford University Press, USA  
Leading researchers synthesize

scattered experimental data to help develop an intimate understanding of how cytokines and chemokines are involved in the pathogenesis of autoimmune diseases. The many chapters offer critical reviews the basic mechanisms controlling cytokine induction and regulation, as well as the resulting production of proinflammatory and anti-inflammatory cytokines, the former of which induces organ-specific autoimmune diseases. From the vantage of these insights, they address the role of cytokines in a wide variety of autoimmune diseases, uveitis, encephalomyelitis, multiple sclerosis, human type 1 diabetes, rheumatoid arthritis, SLE, and myasthenia gravis. Authoritative and state-of-the-art, *Cytokines and Autoimmune Disease* highlights the enormous therapeutic potential of cytokine modulation in the treatment of autoimmune disease. *Cytokine Frontiers* Academic Press  
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 Würrzburg (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.

Cytokine-Induced Killer Cells—Advances in Research and Application: 2012 Edition Gulf Professional Publishing

The purpose of this book is to examine immune-to-brain communication from the viewpoint of its effect on pain processing, and to clarify the major role that substances released by immune cells play in pain modulation. In these chapters, contributed by major laboratories whose focus is understanding how cytokines modulate pain, the perspectives examined range from evolutionary approaches across diverse species, to the basics of the immune response, to the effect of cytokines on peripheral and central nervous system sites, to therapeutic potential in humans. -- book cover.

*Cooperation of Liver Cells in Health and Disease* ScholarlyEditions

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 (iTreg35) 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.

**Inflammatory Cytokines, Receptors, and Disease** CRC Press

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.

New Advances on Cytokines Springer Science & Business Media  
Intercellular Signaling Peptides and Proteins: Advances in Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Intercellular Signaling Peptides and Proteins. The editors have built Intercellular Signaling Peptides and Proteins: Advances in Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Intercellular Signaling Peptides and Proteins in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Intercellular Signaling Peptides and Proteins: Advances in Research and Application: 2011 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility.

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*Cytokine Bioassays* Springer Science & Business Media

It is only during the last decade that the functions of sinusoidal endothelial cells, Kupffer cells, hepatic stellate cells, pit cells and other intrahepatic lymphocytes have been better understood. The development of methods for isolation and co-culturing various types of liver cells has established that they communicate and cooperate via secretion of various intercellular mediators. This monograph summarizes multiple data that suggest the important role of cellular cross-talk for the functions of both normal and diseased liver. Special features of the book include concise presentation of the majority of detailed data in 19 tables. Original schemes allow for the clear illustration of complicated intercellular relationships. This is the first ever presentation of the newly emerging field of liver biology, which is important for hepatic function in health and disease and opens new avenues for therapeutic interventions.

*Cytokines* Academic Press

This exciting new text describes how cells normally regulate immunological and inflammatory reactions, and how the immune system is intimately related to other bodily functions. The authors consider the effects of lymphokines on non-inflammatory cells and tissues, including connective tissue and the neuroendocrine system, and describe the effects of neuroendocrine and peptide growth factors produced by non-inflammatory cells and tissues on the functions of immune cells. To highlight the factors regulating immunophysiological functions, they discuss the inflammatory consequences

of endotoxin, immune complexes, and complement; the interactions of immunomodulating epidermal factors and immune tissue; the modulation interactions of immunomodulating epidermal factors and immune tissue; and the modulation of immunity by cytokines. The mechanisms by which the immune system normally contends with bacterial, viral or tumor challenges are examined, with an emphasis on basic concepts and key experimental results; and the cells directly involved in host-defense processes are discussed. Wherever possible, information about in vivo and in vitro human immune responses is presented.

Cytokines and Chemokines in Infectious Diseases Handbook Springer Science & Business Media

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 immuneresponse, and therapeutics.

**International Review of Experimental Pathology** Frontiers Media SA

The release of cytokines, chemokines, and other immune-modulating mediators released from innate immune cells, including eosinophils, neutrophils, macrophages, dendritic cells, mast cells, and epithelial cells, is an important event in immunity. Cytokine synthesis and transportation occurs through the canonical protein trafficking pathway associated with endoplasmic reticulum and Golgi. How cytokines are released upon their exit from the trans-Golgi network varies enormously between cell types, and in many cells this has not yet been characterized. This issue delves into the plethora of cytokines released by innate immune cells, and where possible, shines light on specific mechanisms that regulate trafficking and release of Golgi-derived vesicles. Each cell type also shows varying degrees of dependency on microtubule organization and actin cytoskeleton remodeling for cytokine secretion. Understanding the mechanisms of cytokine secretion will reveal the inner workings of individual innate immune cell types, and allow identification of critical regulatory steps



in cytokine release.

**The Cytokine Handbook, Two-Volume Set** Springer

Cytokine-Induced Killer Cells—Advances in Research and Application: 2012 Edition is a ScholarlyPaper™ that delivers timely, authoritative, and intensively focused information about Cytokine-Induced Killer Cells in a compact format. The editors have built Cytokine-Induced Killer Cells—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Cytokine-Induced Killer Cells in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Cytokine-Induced Killer Cells—Advances in Research and Application: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

Pharmacology of Cytokines CRC Press  
This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and

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**Cytokine-Induced Pathology** Springer

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. Secretion of Cytokines and Chemokines by Innate Immune Cells Springer Science & Business Media

Presenting a wealth of new data on the interaction among T-cell subsets and cytokines, this book offers a fresh perspective on infectious diseases. It provides useful insights into the nature and treatment of helminthic and mycobacterial infections, with special emphasis on leprosy, leishmaniasis, malaria and trypanosomiasis. The outcome of the host response to infectious agent is seen as depending upon the T-cell subsets activated and the cytokines produced by them and

other cells, such as macrophages, B cells and basophils. Experts contributions shed new light on how TH0 cells are preferentially activated and differentiated into TH1 or TH2 subsets; TH1 and TH2 cells and their cytokines induce both protective immune responses and adverse immune reactions to infectious agents; cytokines modulate the response of infectious diseases to chemotherapy; and cytokines, their receptors and antagonist, and anti-cytokine antibodies can be used in therapy. Those working in the fields of immunology, parasitology, microbiology and vaccine development particularly if they are interested in tropical diseases, will find the volume an invaluable source of information.

*Polyfunctional Cytokines* Oxford University Press, USA

*Cytokine Bioassays: Methods and Protocols* provides a comprehensive collection of classic and cutting-edge methodologies that are used to analyze and quantify cytokines and their biological activities in complex biological and clinical samples. Chapters are divided into three main categories, the first category details the immunodetection of released cytokines in tissue culture supernatants, plasma, serum, and whole blood samples by immunoassays. The second part focuses on the analysis of biologically active cytokines by bioassays using neutralizing antibodies, chemotaxis assay, cytokine-induced phagocytosis assay, proteasome activity assay, and analysis of cytokine-induced immunoglobulin class switching. Part three presents analysis of intracellular cytokines by flow cytometry, immunohistochemistry, immunofluorescence confocal microscopy, and western blotting.

Written in the highly successful *Methods in Molecular Biology* series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, *Cytokine Bioassays: Methods and Protocols* is written by experienced, basic, and clinical researchers with hands-on knowledge of the described protocols. 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.

*Cytokine Knockouts* Frontiers in Molecular Biology

*Cytokine-Induced Killer Cells: Advances in Research and Application: 2011 Edition* is a ScholarlyPaper™ that delivers timely, authoritative, and intensively focused information about Cytokine-Induced Killer Cells in a compact format. The editors have built *Cytokine-Induced Killer Cells: Advances in Research and Application: 2011 Edition* on the vast information databases of ScholarlyNews.™ You can expect the information about Cytokine-Induced Killer Cells in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of *Cytokine-Induced Killer Cells: Advances in Research and Application: 2011 Edition* has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available



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