

An in-depth discussion of the important role of Fc receptors in the immune response—

A N D T H E A C T I O N O F

Edited by Henry Metzger

In this collection of focused reviews, major contributors to the field examine the current status of research into the class of proteins known as Fc receptors.

Written for investigators, postdoctoral fellows, and graduate students in immunology, the book details the mechanisms by which antibodies interact with Fc receptors and regulate their own biosynthesis, transport, and catabolism. In addition, papers explore how Fc receptors promote phagocytosis, degranulation, and cell lysis, actions which can ultimately lead to the destruction of offending antigens.

Researchers interested in the actions of antibodies in the immune response will find these molecular genetic analyses fascinating reading. These papers provide fresh insights into the importance of receptors that can initiate the complement cascade, stimulate phagocytosis, trigger release of cellular mediators, and promote cell-mediated killing of other cells and of microorganisms.

The book is organized into seven sections: Structure and Function of Antibodies (3 chapters) • Receptor-Mediated Transport and Metabolism (3 chapters) • Activation of Complement System (1 chapter) • Antibody-Mediated Endocytosis (1 chapter) • Fc Receptor-Mediated Secretion (2 chapters) • Fc Receptor-Mediated Killing (1 chapter) • Antibody-Mediated Regulation of Lymphocytes (2 chapters)

CONTRIBUTORS:

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A significant update on signalling processes in immunoregulation—

LIGANDS, RECEPTORS, AND SIGNAL TRANSDUCTION IN REGULATION OF LYMPHOCYTE FUNCTION

Edited by John C. Cambier

Immunologists agree that one necessary precursor to intelligent therapeutic intervention in immunologic diseases is a full understanding of the means by which ligands and their receptors engage in the transduction of signals across the plasma membrane, with subsequent alteration of gene expression.

This book provides readers with a convenient summary of the current state of research in this area. It features contributions from leading investigators on the role of physiologic ligands including immunogens, major histocompatibility complex class I and class II molecule-associated peptides, and lymphoid cell-associated ligands.

CONTRIBUTORS:

Thomas Barrett, Stephen H. Benedict, Anna T. Brini, John C. Cambier, Kerry S. Campbell, Marcia A. Chan, Marcio Chedid, Edward A. Clark, William L. Farrar, Terri H. Finkel, Erwin W. Gelfand, Lisa K. Gilliland, Angelika Grossmann, Louis B. Justement, David J. Kelvin, Ralph T. Kubo, Peter J. L. Lane, Jeffrey A. Ledbetter, Diana Linnekin, Peter E. Lipsky, Fiona McConnell, Kathryn E. Meier, Dennis F. Michiel, Steven B. Mizel, John G. Monroe, Peter S. Rabinovitch, Neal Roehm, Vicki L. Seyfert, Fumihiko Shirakawa, E. Charles Snow, Judy B. Splawski, Mary A. Valentine.

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Microbial Cell Surface Hydrophobicity

Edited by **R. J. Doyle**, *University of Louisville, Louisville, Ky.*, and **Mel Rosenberg**, *Tel Aviv University, Ramat Aviv, Israel*

Despite the voluminous journal literature on the hydrophobicity of microorganisms, its structural basis, and its role in microbial adhesion to surfaces, in differentiation, and in morphogenesis, this is the first book devoted to this subject. There has been a growing realization that hydrophobic interactions play a role in many, if not most, microbial adhesion phenomena, including microbial adhesion to soft host tissues, implants and prostheses, contact lenses, glass, oil, steel, teeth, submerged aquatic surfaces, plants, and fish. The authors in this book were selected based on their substantial contributions to the field. Medical, applied, and environmental microbiologists; environmental, microbial, and petroleum engineers; infectious-disease physicians and researchers; and oral biologists will all benefit from this excellent summary and review.

CONTENTS

Microbial Cell Surface Hydrophobicity: History, Measurement, and Significance (*M. Rosenberg and Doyle*); Nature of the Hydrophobic Effect (*Duncan-Hewitt*); Microbial Hydrophobicity and Fermentation Technology (*Mozes and Rouwhet*); Role of Hydrophobic Interactions in Microbial Adhesion to Plastics Used in Medical Devices (*Klotz*); Hydrophobicity of Proteins and Bacterial Fimbriae (*Irvin*); Adhesion of Bacteria to Plant Cells (*Smit and Stacey*); Hydrophobicity in the Aquatic Environment (*Bar-Or*); Changes in Bacterial Surface Hydrophobicity during Morphogenesis and Differentiation (*E. Rosenberg and Sar*); Cell Surface Hydrophobicity of Medically Important Fungi, especially *Candida* Species (*Hazen*); Significance of Hydrophobicity in the Adhesiveness of Pathogenic Gram-Negative Bacteria (*Lachica*); Hydrophobic Characteristics of Staphylococci (*Wadstrom*); Relative Importance of Surface Free Energy as a Hydrophobicity Measure in Bacterial Adhesion to Solid Surfaces (*Busscher, Sjollem, and van der Mei*); Hydrophobicity of Group A Streptococci and Its Relationship to Adhesion of Streptococci to Host Cells (*Courtney, Hasty, and Ofek*); Hydrophobicity of Oral Bacteria (*Doyle, M. Rosenberg, and Drake*)

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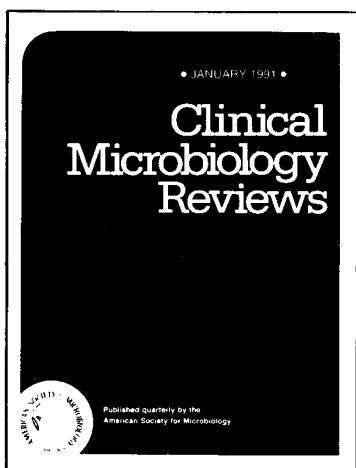
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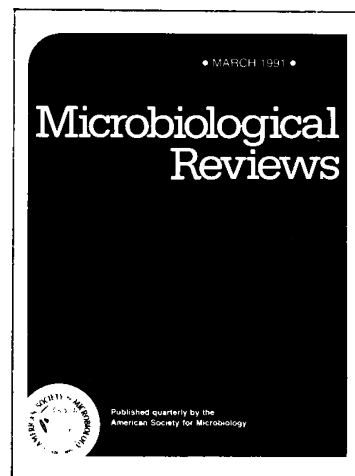
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A significant update on signalling processes in immunoregulation LIGANDS, RECEPTORS, AND SIGNAL TRANSDUCTION IN REGULATION OF LYMPHOCYTE FUNCTION

Edited by John C. Cambier

THE ROLE of the physiologic ligands, including immunogens, major histocompatibility complex class I and class II molecule-associated peptides, and lymphoid cell-associated ligands, has been the focus of intense research over the last decade. Immunologists concur that one necessary precursor to intelligent therapeutic intervention in immunologic diseases is a full understanding of the means by which these ligands and their receptors engage in the transduction of signals across the plasma membrane, with subsequent alteration of gene expression.

This book provides a comprehensive update of the current state of knowledge about the molecular basis of the intervening events between receptor-ligand interaction and biologic responses. The chapters addressing antigen, interleukin-2, and interleukin-1 receptors provide relatively complete descriptions of their operative processes, while the chapters on B-cell regulatory lymphokines reflect the more limited current knowledge of the processes. The book also addresses the phenomenon of cross-modulation of signalling and the ability of members of the family of "cluster of differentiation" antigens to act as signal transducers.

Researchers, postdoctoral fellows, and graduate students in the fields of immunology and cell biology will

find this discussion of the signalling processes operative in physiologic regulation of lymphocytes useful both as a summary of present knowledge and as a roadmap for future research.

CONTRIBUTORS:

Thomas Barrett, Stephen H. Benedict, Anna T. Brini, John C. Cambier, Kerry S. Campbell, Marcia A. Chan, Marcio Chedid, Edward A. Clark, William L. Farrar, Terri H. Finkel, Erwin W. Gelfand, Lisa K. Gilliland, Angelika Grossmann, Louis B. Justement, David J. Kelvin, Ralph T. Kubo, Peter J. L. Lane, Jeffrey A. Ledbetter, Diana Linnekin, Peter E. Lipsky, Fiona McConnell, Kathryn E. Meier, Dennis F. Michiel, Steven B. Mizel, John G. Monroe, Peter S. Rabinovitch, Neal Roehm, Vicki L. Seyfert, Fumihiko Shirakawa, E. Charles Snow, Judy B. Splawski, Mary A. Valentine.

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MICROBIAL DETERMINANTS OF VIRULENCE AND HOST RESPONSE

Editor: Elia M. Ayoub

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THE PROLIFERATION of information on the molecular microbiology of factors involved in microbial virulence prompted this comprehensive new publication. Essentially a survey and evaluation of the current status of research in the related fields of bacteriology, mycology, immunology, and host-parasite relationships, the book offers readers a useful summary of recent advances. Based on a workshop held under the auspices of the Bacteriology and Mycology Study Section of the Division of Research Grants and the National Institute of Allergy and Infectious Diseases, the book contains the following sections and chapters:

I. Bacterial Factors

1. Regulation of Post-Exponential-Phase Exoprotein Synthesis in *Staphylococcus aureus* (Novick et al.); 2. Streptococcal Immunoglobulin-Binding Proteins (Boyle et al.); 3. Noncapsular Surface Antigens and Their Association with Virulence of *Haemophilus influenzae* Type b (Hansen); 4. Reappraisal of the Chemistry of Mycobacterial Cell Walls, with a View to Understanding the Roles of Individual Entities in Disease Processes (Brennan et al.); 5. Regulation of the Immune Response to *Mycobacterium tuberculosis* (Ellner et al.); 6. Role of Major Histocompatibility Complex (MHC) and Non-MHC Genes in Host Resistance and Susceptibility to Mycobacteria (Buschman et al.); 7. Role of the Capsular Polysaccharide of Type III Group B Streptococci in Virulence (Kasper et al.).

II. Fungal Factors

8. Immunobiology of *Histoplasma capsulatum*-Reactive T Cells (Deepe); 9. Gamma Interferon and Experimental Murine Histoplasmosis (Wu-Hsieh and Howard); 10. Macrophage Oxidation of L-Arginine Is Linked to Fungistatic Capability (Granger et al.); 11. *Candida albicans* Acid Proteinase: a Role in Virulence (Ray and Payne); 12. Adherence of *Candida albicans* to Mammalian Cells (Edwards and Mayer).

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13. Pilus and Outer Membrane Protein II Variation in *Neisseria gonorrhoeae* (Swanson); 14. Outer Membrane Proteins of *Neisseria gonorrhoeae* (Elkins and Sparling); 15. Cellular and Molecular Pathogenesis of Syphilis (Blanco et al.); 16. Chlamydial 57-Kilodalton Stress Response Protein Is a Deleterious Immune Target (Morrison).

IV. Biologic Factors

17. The Neutrophil NADPH Oxidase System: Molecular Aspects (Clark); 18. Lipopolysaccharide Signal Modification by Acyloxyacyl Hydrolase, a Leukocyte Enzyme (Munford et al.); 19. Regulation of Macrophage-Mediated Antigen Presentation by Microbial Products (Ziegler); 20. Complement in Host Defense against Bacterial Infections (Frank).

V. Antibiotic Resistance

21. Antibiotic Resistance in *Haemophilus influenzae* (Smith); 22. New and Complex Strategies of β -Lactam Antibiotic Resistance in Pneumococci and Staphylococci (Tomasz); 23. Evolving β -Lactamases (Jacoby); 24. Multiple Antibiotic Resistance: Gene Selection, Function, and Spread (Levy).

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