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The Innate Immune Response to Infection

AMS Press, American Society for Microbiology: Washington, DC, 2004. XV + 465 pages. Format 178 × 253 mm. Binding: Hardcover. Price: USD 115.95.
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The editors are affiliated with the Max Planck Institute for Infection Biology, Berlin, Germany, Yale University School of Medicine, New Haven Connecticut, and University of Oxford, Oxford, United Kingdom. The list of contributors comprises 56 international experts in microbial diseases, medical and infection microbiology, molecular bioscience, immunology, immunochemistry, biotechnology, pathology, gastroenterology, laboratory medicine, and others. The contributors come from Europe, USA, Japan and Australia. It is stated in the preface that two earliest principles are the divisions into innate versus acquired immunity and into humoral versus cellular immunity. Since the birth of scientific immunology in the late 19th century, these two principles have coexisted. Hans Buchner, and soon thereafter Paul Ehrlich, described alexins or complement, respectively, as the soluble components of the innate response, leading to a free combination of cellular and humoral immunity with specific (acquired) and nonspecific (innate) immunity. The editors hope that this book fulfills its goal, namely to present a state-of-the-art review of innate immunity, looking at the oldest immune system through the eyes of the most timely concepts of cellular and molecular biology. The volume is composed of four sections and includes in total 22 chapters.

Introductory two chapters include evolutionary emergences and interactions among elements of the innate and combinatorial responses, and *Drosophila* responses to microbial infection. Section 1 draws particular attention to mammalian cells, nominally to neutrophils, the biology of macrophages, the regulatory role of dendritic cells, roles of mast cells and basophils in innate

immunity, innate natural killer cells, urinary tract infection as a model for innate mucosal immunity, and Paneth cells in innate immunity and intestinal inflammation. Section 2 is devoted to humoral factors, notably to lectins and the acute-phase response, complement and its receptors to infection, and coagulation and innate immunity. Section 3 provides look at receptors with special reference to toll-like receptors: ligands and signaling, toll-like receptors and control of adaptive immunity, antigens-presenting cell receptors, and function leukocyte immunoglobulin-like receptors. Section 4 encompasses effector responses, particularly antimicrobial peptides, antimicrobial proteins, reactive oxygen and reactive nitrogen metabolites, chemokines, lipids, and role of innate immunity to bacterial infection.

The volume is illustrated by line drawings, featuring schematic representations of miscellaneous biological phenomena related to immunology: scheme for evolution of multigene families, neutrophil life span and stages of maturation, signaling cascades and molecules, adherence and mechanisms of tissue targeting, regulation to blood coagulation, biosynthetic pathways, cytokine regulation, and many others. Numerous tabular summaries give overviews of textual data. In addition there are six full-page colour plates.

Unique of its representation, this new volume covers all aspects of innate immunity with an emphasis on response to infectious agents. It is a valuable reference source for scientists and students in all areas of immunology and microbiology, as well as virology, parasitology, and infectious diseases.

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