

HLA and MHC: GENES, MOLECULES AND FUNCTION

edited by

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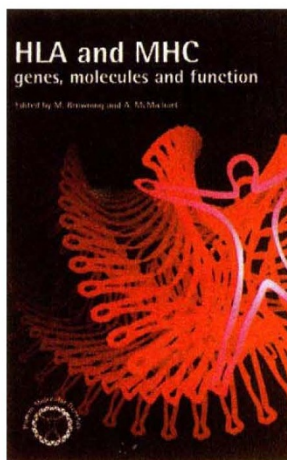
This volume provides a timely summary of the current knowledge of the structure, regulation and function of the major histocompatibility complex (MHC) molecules, encompassing a field that has advanced dramatically in the last decade. It is reasonably up-to-date and generally covers advances made up to 1995, although the rapid pace of research in this area makes it inevitable that important recent advances are not covered.

The book is a collection of 17 chapters written by various authorities in the field. The first 12 chapters review a series of topics basic to the field, including the evolution of MHC molecules, MHC genetics, structure and diversity of class I and class II MHC genes, regulation of class I and class II MHC gene expression, structure of MHC molecules as revealed by X-ray crystallography, antigen processing mechanisms and the characteristics of peptides that bind to class I and class II MHC molecules. The last five chapters cover topics related to MHC function and control of immune responses, including the functions of class I- and class II-restricted T cells, transplantation and tolerance and HLA disease associations (e.g., autoimmunity, with a separate chapter on HLA and susceptibility to type I diabetes mellitus).

As an edited collection of chapters written by different authors, the book faces the occasional gaps and redundancies that are so difficult to eradicate from this type of work, but the pleasant surprise is how infrequently they arise. The editors have constructed a careful outline that evenly covers most parts of the field. Some additional topics could have been covered, but they are largely peripheral. Related topics that could have been covered in greater depth (e.g., with a separate chapter) include the growing field of class Ib molecule

structure and function (CD1, HLA-G, etc.) and important recent advances in our understanding of recognition of class I MHC molecules by natural killer (NK) cells. One minor annoyance is the segregation of all color plates from the entire book into one section situated in chapter 11, which makes them less accessible to the reader from the other chapters.

The book is best suited to readers who have already been introduced to the general aspects of this field, since basic introductions to some areas are scanty. In addition, the background for some concepts used early in the book is not developed until later in the book.



One example is a very detailed discussion of the evolution of MHC and MHC-like molecules in chapter 1, before these molecules have been described in detail. Thus, the book is clearly not targeted to students who are taking their first course in immunology, but the detailed coverage of subjects will appeal to readers who are involved in related fields and have the appropriate background.

In summary, this volume is recommended as a good, fairly comprehensive current review of topics related to MHC molecules, targeted toward advanced students and researchers in immunology.

Evolution of Sickness and Healing

by **Horacio Fabrega, Jr.**

University of California Press

ISBN: 0-520-20609-6, 1997, \$45.00

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It has been a long time since I've read a book that was simultaneously thought-provoking and frustratingly muddled. However, the recent publication of Horacio Fabrega Jr.'s book, *Evolution of Sickness and Healing*, provided me with such an opportunity. In it, Fabrega takes on the daunting task of providing a "descriptive interpretation of the evolution of medicine, to provide a conceptual frame of reference for visualizing this evolution, and to propose a methodology for studying it." I do not think that he has succeeded in this task, but in his attempt to do so, he has provided fertile ground for debate.

In order to unify the

widely diverse field of medicine, Fabrega proposes (assumes) the existence of a "Sickness/Healing" adaptation (SH), that has been forged during the process of human evolution. This SH adaptation is believed to "sense" when the anatomy, physiology or chemistry of the organism is diseased or injured. In addition, and in response to the detection of disease or injury, the SH adaptation produces behaviors designed to elicit healing responses for the organism and its conspecifics. Thus the SH adaptation is conceptualized as a hard-wired, genetically based, programmed language of sickness and healing that endows all human beings with a capacity to respond to disease and injury in a biologically significant way. As such, it is considered to be as foundational or instinctual (if not more so) as themes of attachment, bonding, sexuality and cognition.

Having assumed the SH adaptationist proposition, Fabrega proposes the following link between genes and medical institutions: SH machinery is held to underwrite an individual's capacity for learning medical "memes" — culturally meaningful units of information that are stored in the brain; medical memes, therefore, are more tightly bound to individuals pos-

