



Microbiología e inmunología médicas

WARREN LEVINSON

2006, McGraw-Hill/Interamericana, Madrid, Spain
700 pp., 18.5 × 23 cm
Price: €71.97
ISBN: 84-481-4540-2

An infectious disease can be defined as a clinically evident illness caused by one or more pathogenic microbial agents—bacteria, viruses, fungi, protozoans, and parasitic worms (helminthes)—that invade, grow, and multiply in the body, impairing the host's functions through damage or injury to tissues and organs. However, infectious diseases are not due to pathogenic microorganisms alone, but rather to their interplay with the immune-system defenses of the hosts they infect.

Microbiología e inmunología médicas is the Spanish translation of *Medical microbiology and immunology*, by Warren Levinson, Professor of Microbiology and Immunology for over 30 years at the University of California-San Francisco Medical School. The book comprises eleven parts. In the first seven, which are subdivided into sixty-eight short chapters, Levinson provides a basic framework for understanding each concept or organism with the help of concise subsections, numerous summary tables, simplified diagrams, and excellent illustrations. Basic and clinical bacteriology are the focus of the book's first two parts. Part I begins by explaining bacterial cells in terms of their structure, growth (metabolism), and genetics, and then proceeds to discuss pathogenesis, host resistance, laboratory diagnosis, antimicrobial drugs, and sterilization techniques. Part II, "Clinical bacteriology", provides a summary of the clinically important gram-positive and gram-negative bacteria, mycobacteria, actinomycetes (actinobacteria), mycoplasma, chlamydia, *Rickettsia*, and other minor bacterial pathogens. The characteristics of these microorganisms, their method of transmission and treatment, and other details relevant to a clinically based understanding of these microorganisms are presented.

Parts III and IV review basic and clinical virology. The first chapters deal with viral structure, replication and genetics, pathogenesis, and host defenses, as well as laboratory

diagnosis, antiviral drugs, and vaccines. This is followed by a more detailed classification and description of the main viruses affecting humans. Viruses can be classified according to different criteria: the host cell they infect, the geometrical shape of their capsid, or—as in this textbook's case—viral structure, i.e., the presence or absence of an envelope and the nature of the virus' genetic material, either DNA or RNA. Levinson also provides separate chapters with thorough and up-to-date information on hepatitis and the human immunodeficiency (HIV) viruses, prions, and oncoviruses (Levinson is the well-known author of many research and review articles on these topics).

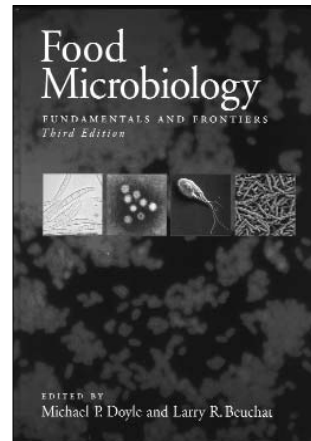
Part V, "Mycology", begins with a description of the main characteristics of fungi, distinguishing those that cause fungal infections, mycotoxicoses, and allergies, from the ones commonly used for industrial purposes (wine, cheese, bread, and beer production). This is followed by a more in-depth discussion of the four types of medical mycoses (cutaneous, subcutaneous, systemic, and opportunistic). Parasitology, the study of parasites, their hosts and the relationship between them, is the subject of Part VI. The first three chapters discuss the pathogenesis, epidemiology, clinical manifestations, diagnosis, treatment, and prevention of protozoan pathogens (amoebas, ciliates, flagellates and sporozoans), which most often affect the host's blood, several tissues and organs (including the eyes), and digestive and urogenital tracts. The last three chapters concentrate on metazoan pathogens (flatworms or platyhelminthes and roundworms or nematodes).

Part VII offers a brief yet comprehensive overview of immunology. The interplay between a pathogen and the host's defenses is complex. In many cases, disease is caused by the microorganism's intrinsic virulence, but it can also be the consequence of the host's depressed resistance, due to genetic defects, immunosuppressive medications, or primary illness (e.g., cancer). This section discusses the physiology of the human immune system, innate and acquired or adaptive immunity, its cellular and humoral components, the major histocompatibility complex, the complement system, hypersensitivity, autoimmune diseases, immunodeficiency, antibodies. The high specificity of the antibody-antigen reaction that results in disease prevention can also be taken advantage of in the clinical diagnosis of those microorganisms that cannot be cultured, either because the techniques are not available, there is a high risk involved, or the process is too slow.

The English original edition of *Medical microbiology and immunology* was intended to be used by students preparing for the USMLE (*National Boards: United States Medical Licensing Examinations*) and as a concise reference for those taking a microbiology or immunology course in medical school. For that reason, the four last parts of the text consist

of summaries and a study guide. Part VIII is entitled “Summaries of medically relevant organisms”, while Part IX allows the reader to test his or her knowledge through fifty clinical cases of common infectious diseases that highlight the most relevant clinical manifestations needed for their diagnosis. Parts X and XI consist of over 600 USMLE-format questions and a complete USMLE-style exam with case-based questions. As Vicente Ausina, Professor of Clinical Microbiology at the Germans Trias i Pujol Hospital, Badalona (Autonomous University of Barcelona, UAB) points out in his prologue to the Spanish edition of the book, these are also a useful learning tool for Spanish and Latin American students in the medical sciences and laboratory technicians as they provide an efficient format for testing one’s knowledge of infectious diseases and of the clinical applications of microbiology and immunology to their diagnosis and treatment. *Microbiología e inmunología médicas*, the Spanish version of the book’s eighth edition, has been translated by a team of experts in bacterial molecular genetics and microbiology, under the excellent guidance of Isidre Gibert, from the Institute for Biotechnology and Biomedicine, UAB. One of Levinson’s goals was “to provide students who are presently taking medical microbiology courses with a brief and flexible source of information.” The book offers the reader a wealth of knowledge in a concise format thanks to clear, interesting, and up-to-date presentations; summaries of the most important aspects of the main microorganisms—which have also been classified according to their pathogenic importance; tables, figures, and diagrams containing the most relevant information; and finally, multiple choice questions and practical cases intended for self-testing.

NICOLE SKINNER
INTERNATIONAL MICROBIOLOGY
niskinner@iec.cat



Food microbiology. Fundamentals and frontiers. 3rd edn.

MICHAEL P. DOYLE,
LARRY R. BEUCHAT (eds)

2007. ASM Press, Washington,
DC, USA
1038 pp, 22 × 28.5 cm
Price: US\$ 169.95
ISBN 978-1-55581-407-6

Uncontrolled and unwanted microbial growth destroys vast quantities of food, causing significant losses both economically and with respect to nutrient content. Moreover, the consumption of food contaminated with particular microorganisms or microbial products can also cause serious illness, such as food-mediated infections and food poisoning. Every minute, there are over 50,000 cases of gastrointestinal illnesses, and many individuals, especially children, die from these infections. The most important preventive measures are aimed at the continuing development and implementation of effective interventions to improve the overall safety of foods. The third edition of *Food microbiology. Fundamentals and frontiers* will contribute significantly to detecting, and perhaps even to solving, the problems arising from food contamination and spoilage.

Food microbiology offers updated and detailed scientific information on food microbiology. The book is organized in ten major sections, five of which focus on food-borne microorganisms. Each section consists of a detailed study of a food-borne microbe: pathogenic bacteria, molds and yeast, viruses, prions, and parasites. The microbial diversity found in food is well-illustrated by the four cover photographs of a fungus, a virus, a protist, and a bacterium. Although the main topic discussed is microbial food-pathogens, the book also covers other important aspect of food microbiology, such as food ecosystems and measures to prevent and control food-borne disease microorganisms. This third edition also introduces several completely new chapters on foodborne pathogens, biodefense, antimicrobial resistance, and advanced molecular techniques in food microbiology.

Section I, *Factors of special significance to food microbiology*, examines several different topics. In the first, food ecology, the authors point out the differences between the contamination of food by microbes vs. chemical contamination. Microbes change in number (“concentration”) with time, as long as the growth conditions are favorable. Microbial growth in foods is a complex process governed by