# <<Prescott微生物学原理>>

## 图书基本信息

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## 前言

Prescotts Principles of Microbiology continues in the tradition of Prescott, Harley, and Kleins Microbiology by covering the broad discipline of microbiology at a depth not found in any other textbook. In using the 7th edition of PHKs Microbiology as the foundation for the development of Principles, we identified two overarching goals. First, we sought to present material likely to be covered in a single semester microbiology course, with the knowledge that not all introductory microbiology courses cover the same topics. Therefore, each chapter in Prescotts Principles of Microbiology was revised from the 7th edition of PHKs Microbiology to provide a streamlined, briefer discussion of key concepts that include only the most relevant, up:to-date examples. Secondly, we strove to further extend the student-friendly approach used in the 7th edition by enhancing readability and adding tools designed to promote learning. our STRENGTHS Conneoting with Students We have retained the relatively simple and direct writing style used in PHKs Microbiology, but have added style elements designed to further engage student. For example, we frequently use the first person voi~ de.be important concepts——especially those that our students find most difficult. Each chapter is divided into numbered sectionheadings and organized in an outline formata——the same outline format that is presented in the end-of-chapter summaries. Key terminology is boldfaced and clearly defined. We have introduced a glossary of essential terms at the beginning of each chapter to serve as an easy reference for students, while retaining the full glossary in the back of the book. Our belief that concepts are just as important as facts, if not more, is also reflected in the questions for review and reflection that appear throughout each chapter.

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## 内容概要

本书由教育部高等教育司推荐，是国外优秀生命科学教学用书，本版为英文影印版。
全书包括“INTRODUCTION TO MICROBIOLOGY”“MICROBIAL NUTRITION GROWTH，AND CONTROL”“MICROBIAL METABOLISM”“MICROBIAL MOLECULAR BIOLOGY AND GENETICS”等八个部分。

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## 书籍目录

## 章节摘录

Although pathogenic microbes are the minority, they garner considerable interest. Thus, one of the most active and important fields in microbiology is medical microbiology, which deals with diseases of humans and animals. Medical microbiologists identify the agents causing infectious diseases and plan measures for their control and elimination. Frequently they are involved in tracking down new, unidentified pathogens such as the agent that causes variant Creutzfeldt-Jakob disease （the human version of "mad cow disease"）, hantavirus, West Nile virus, and the virus responsible for SARS. These microbiologists also study the ways in which microorganisms cause disease. Microbial Diversity & Ecology 24. 1: SARS: Evolution of a virus As noted earlier, major epidemics have regularly affected human history. The 1918 influenza pandemic is of particular note; it killed more than 20 million people in about one year. Public health microbiology is concerned with the control and spread of such communicable diseases. Public health microbiologists and epidemiologists monitor the amount of disease in populations. Based on their observations, they can detect outbreaks and developing epidemics, and implement appropriate control measures in response. They also conduct surveillance for new diseases as well as bioterrorism events. Those public healthmicrobiologists working for local governments monitor community food establishments and water supplies in an attempt to keep them safe and free from infectious disease agents.

Immunology is concerned with how the immune system protects the body from pathogens and the response of infectious agents. It is one of the fastest growing areas in science. Much of the growth began with the discovery of HIV, which specifically targets cells of the immune system. Immunology also deals with health problems such as the nature and treatment of allergies and autoimmune diseases such as rheumatoid arthritis. Techniques & Applications 29.1: Monoclonal antibody technology Agricuralm microbiology is concerned with the impact of microorganisms on agriculture. Microbes such as nitrogen-fixing bacteria play critical roles in the nitrogen cycle and affect soil fertility. Other microbes live in the digestive tracts of ruminants such as cattle and break down the plant materials these animals ingest. There are also plant and animal pathogens that can have significant economic impacts if not controlled. Agricultural microbiologists work on methods to increase soil fertility and crop yields, study rumen microorganisms in order to increase meat and milk production, and try to combat plant and animal diseases. Currently many agricultural microbiologists are studying the use of bacterial and viral insect pathogens as substitutes for chemical pesticides.

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