Macrolide Antibiotics

Edited by W. Schöenfeld and H. A. Krist.
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**Macrolide Antibiotics** is a comprehensive book dealing with most aspects of the chemistry, microbiology, pharmacology, pharmacokinetics, pharmacodynamics and many but not all clinical aspects of the macrolides since erythromycin and up to the newer macrolides, azalides, polyketides and ketolides. This book is timely in view of the launch of the first new ketolide. The editors of this volume and the authors of all chapters are leading authorities in this field, and thus the book contains great expertise and is of great quality. This book emphasizes the synthesis and structure of the various old and novel macrolides, azalides, ketolides and polyketides and their various derivatives and their structure–activity relationships with respect to microbiological spectrum, stability, absorbability, and some other pharmacologic features. In this respect the volume is outstanding, and complete. The mode of action, the microbiological features, resistance mechanisms, intracellular accumulation and non-antibacterial activities are also very well and exhaustively described, as are the pharmacokinetics, pharmacodynamics, and antimicrobial and antitymocobacterial activities. The toxicologic data described for the various compounds are only basic and thus incomplete. There are only a few chapters dealing with the clinical uses of this important class of antibacterial agents, including excellent specific chapters dedicated to *Helicobacter pylori* infections, sexually transmitted diseases and *Chlamydia pneumoniae*-associated diseases. While the clinical overview is complete and serves its purpose, there are no specific chapters dedicated to upper and lower respiratory tract infections, where these drugs are most frequently used, or to skin and skin-structure infections, another frequent indication, and there is no chapter dedicated to the use of these compounds in children, where macrolides are frequently used and misused. Some new data from large clinical trials regarding the use of azithromycin and other macrolides in atherosclerosis and prevention of myocardial infarction have not been included, as the book was written in 2001 and these results became known later. The Japanese use of the macrolides in *Pseudomonas aeruginosa*-associated panbronchiolitis is also only mentioned briefly. An essential chapter on the safety and adverse effects of the different macrolides, azalides and ketolides and their derivatives is missing. Macrolide-associated drug interactions are also missing as a distinct chapter, and are only briefly discussed in the clinical overview chapter. The reference list of all chapters is complete and exhaustive, and the figures and tables are informative and of high quality. The Index is too brief, and leaves some of the terms and subjects that the text contains uncovered. In summary, the book will be of assistance to students, chemists, pharmacists, persons from the pharmaceutical industry, microbiologists and others who need preclinical information on the various macrolides. People who are interested in this area will benefit enormously from the vast experience of the editors of this book and the chapter authors. Clinicians and practicing physicians seeking practical clinical information and advice on patient management will need additional sources. The book excels in supplying a succinct and expert view of the possible prospects of various new macrolide compounds.

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Another important area covered within this volume concerns antiviral therapy and the development of vaccines. All these aspects are covered in depth and the volume is fully up to date both scientifically and in terms of clinical guidelines for patient care. The text is generously illustrated throughout and fully referenced to the latest research and developments. Antibiotic resistance arises when bacteria mutate and evolve to sidestep the mechanisms that antimicrobial drugs use to kill them. Without new antibiotics to tackle resistance, 10 million lives around the world could be at risk each year from infections by 2050, the Cameron government’s O’Neill report warned. To find new antibiotics, the researchers first trained a “deep learning” algorithm to identify the sorts of molecules that kill bacteria. To do this, they fed the program information on the atomic and molecular features of nearly 2,500 drugs and natural compounds, and how well or not the