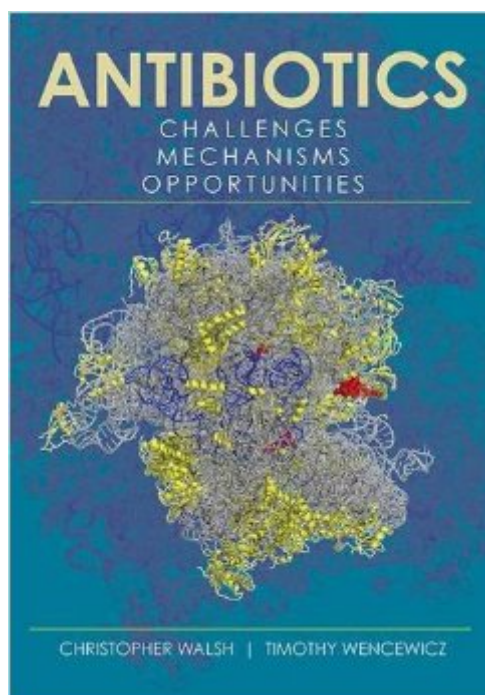


The book was found

# Antibiotics: Challenges, Mechanisms, Opportunities



## Synopsis

A chemocentric view of the molecular structures of antibiotics, their origins, actions, and major categories of resistance. *Antibiotics: Challenges, Mechanisms, Opportunities* focuses on antibiotics as small organic molecules, from both natural and synthetic sources. Understanding the chemical scaffold and functional group structures of the major classes of clinically useful antibiotics is critical to understanding how antibiotics interact selectively with bacterial targets. This textbook details how classes of antibiotics interact with five known robust bacterial targets: cell wall assembly and maintenance, membrane integrity, protein synthesis, DNA and RNA information transfer, and the folate pathway to deoxythymidylate. It also addresses the universe of bacterial resistance, from the concept of the resistome to the three major mechanisms of resistance: antibiotic destruction, antibiotic active efflux, and alteration of antibiotic targets. *Antibiotics* also covers the biosynthetic machinery for the major classes of natural product antibiotics. Authors Christopher Walsh and Timothy Wencewicz provide compelling answers to these questions: What are antibiotics? Where do antibiotics come from? How do antibiotics work? Why do antibiotics stop working? How should our limited inventory of effective antibiotics be addressed? *Antibiotics* is a textbook for graduate courses in chemical biology, pharmacology, medicinal chemistry, and microbiology and biochemistry courses. It is also a valuable reference for microbiologists, biological and natural product chemists, pharmacologists, and research and development scientists.

## Book Information

Hardcover: 477 pages

Publisher: Amer Society for Microbiology; 1 edition (February 5, 2016)

Language: English

ISBN-10: 1555819303

ISBN-13: 978-1555819309

Product Dimensions: 7.2 x 0.9 x 10.1 inches

Shipping Weight: 2.2 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars [See all reviews](#) (2 customer reviews)

Best Sellers Rank: #182,716 in Books (See Top 100 in Books) #17 in [Books > Medical Books > Pharmacology > Clinical](#) #50 in [Books > Textbooks > Medicine & Health Sciences > Medicine > Basic Sciences > Microbiology](#) #164 in [Books > Textbooks > Medicine & Health Sciences > Medicine > Basic Sciences > Pharmacology](#)

## Customer Reviews

Anyone wishing to learn how antibiotics work and how some bacteria can elude their actions will find much in this book. While many authors are good at "presenting" scientific information, the authors of *ANTIBIOTICS: CHALLENGES, MECHANISMS & OPPORTUNITIES* excel at "explaining" and "conceptualizing" all you might ever wish to know about one of the great triumphs of the molecular life sciences. After decades at the forefront of this field, this book's senior author, Professor Chris Walsh, has done it again – masterfully portraying the history, the bioorganic chemistry, the enzyme chemistry, and key cellular events that underpin antibiotic action. Those who have already taken a university-level biochemistry course will be prepared to appreciate this book, but *ANTIBIOTICS* is more likely to become the standard text for one-semester specialty courses in pharmacology and biological chemistry departments. This reviewer will adopt the book as a go-to reference in a seminar course for gifted third-year undergrads who have already earned early admission to the University of Florida College of Medicine. Learning the intricacies of antibiotics from this impeccable book is likely to foster a commitment to life-long learning. If there is any flaw at all in this book it is the publisher's use of low-density paper, which too often reveals text and images on the obverse face of each page. That said, one must commend the authors and publisher for keeping the price in range for most graduate students.

Great book; amazing illustrations. The reference work on this important topic.

[Download to continue reading...](#)

Antibiotics: Challenges, Mechanisms, Opportunities  
Energy for the 21st Century: Opportunities and Challenges for Liquefied Natural Gas (LNG) (New Horizons in Environmental and Energy Law series)  
The Changing Face of Health Care Social Work, Third Edition: Opportunities and Challenges for Professional Practice  
Strategies for the Green Economy: Opportunities and Challenges in the New World of Business  
Private Equity in China: Challenges and Opportunities (Wiley Finance)  
The Black Book of Outsourcing: How to Manage the Changes, Challenges, and Opportunities  
Antibiotics Simplified  
No More Amoxicillin: Preventing and Treating Ear and Respiratory Infections Without Antibiotics  
Herbal Antibiotics  
Secrets: How to Use Herbal Medicine to Prevent, Treat, and Heal Illness Naturally  
Professional Nursing: Concepts & Challenges, 7e (Professional Nursing; Concepts and Challenges)  
How Cars Work: The Interactive Guide to Mechanisms that Make a Car Move  
Hyperbole and a Half: Unfortunate Situations, Flawed Coping Mechanisms, Mayhem, and Other Things That Happened  
Making Things Move  
DIY Mechanisms for Inventors, Hobbyists, and Artists  
The Construction of Modern Science: Mechanisms and Mechanics (Cambridge Studies in the History of Science)  
Interface: Mechanisms of Spirit in Osteopathy  
Biological Mechanisms of Tooth

Movement Mechanisms and Management of Pain for the Physical Therapist The LEGO Power Functions Idea Book, Vol. 1: Machines and Mechanisms Careers in Psychology: Opportunities in a Changing World Social Network-Powered Employment Opportunities (A Teen's Guide to the Power of Social Networking)

[Dmca](#)