

1. Record Nr.	UNINA9910817868703321
Titolo	Novel antimicrobial agents and strategies // edited by David A. Phoenix, Frederick Harris and Sarah R. Dennison ; contributors Waqar Ahmed [and thirty one others]
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH, , 2015 ©2015
ISBN	3-527-67615-5 3-527-67613-9 3-527-67614-7
Descrizione fisica	1 online resource (439 p.)
Disciplina	614.48
Soggetti	Disinfection and disinfectants Anti-infective agents Sterilization
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Novel Antimicrobial Agents and Strategies; Contents; List of Contributors; Preface; Chapter 1 The Problem of Microbial Drug Resistance; 1.1 Introduction; 1.2 History of the Origins, Development, and Use of Conventional Antibiotics; 1.3 Problems of Antibiotic Resistance; 1.4 Multiple Drug-Resistant (MDR), Extensively Drug-Resistant (XDR), and Pan-Drug-Resistant (PDR) Organisms; 1.5 MDR Mechanisms of Major Pathogens; 1.6 Antimicrobial Stewardship Programs; 1.7 Discussion; Acknowledgment; References; Chapter 2 Conventional Antibiotics -- Revitalized by New Agents; 2.1 Introduction 2.2 Conventional Antibiotics 2.3 The Principles of Combination Antibiotic Therapy; 2.4 Antibiotic Resistance Breakers: Revitalize Conventional Antibiotics; 2.4.1 -Lactamase Inhibitors; 2.4.2 Aminoglycoside-Modifying Enzyme Inhibitors; 2.4.3 Antibiotic Efflux Pumps Inhibitors; 2.4.4 Synergy Associated with Bacterial Membrane Permeators; 2.5 Discussion; Acknowledgments; References; Chapter 3 Developing Novel Bacterial Targets: Carbonic Anhydrases as

Antibacterial Drug Targets; 3.1 Introduction; 3.2 Carbonic Anhydrases; 3.3 CA Inhibitors; 3.4 Classes of CAs Present in Bacteria 3.5 Pathogenic Bacterial CAs 3.6 -CAs in Pathogenic Bacteria; 3.7 - CAs in Pathogenic Bacteria; 3.8 -CAs from Pathogenic Bacteria; 3.9 Conclusions; References; Chapter 4 Magainins -- A Model for Development of Eukaryotic Antimicrobial Peptides (AMPs); 4.1 Introduction; 4.2 Magainins and Their Antimicrobial Action; 4.3 Magainins as Antibiotics; 4.4 Other Antimicrobial Uses of Magainins; 4.5 Future Prospects for Magainins; References; Chapter 5 Antimicrobial Peptides from Prokaryotes; 5.1 Introduction; 5.2 Bacteriocins; 5.2.1 Microcins -- Peptide Bacteriocins from Gram-Negative Bacteria 5.2.2 Lanthibiotics -- Post-translationally Modified Peptides from Gram-Positive Bacteria 5.2.3 Non-modified Peptides from Gram-Positive Bacteria; 5.3 Applications of Prokaryotic AMPs; 5.3.1 Food Biopreservation; 5.3.2 Bacteriocinogenic Probiotics; 5.3.3 Clinical Application; 5.3.4 Applications in Dental Care; 5.4 Development and Discovery of Novel AMP; References; Chapter 6 Peptidomimetics as Antimicrobial Agents; 6.1 Introduction; 6.2 Antimicrobial Peptidomimetics; 6.2.1 Peptoids; 6.2.2 -Peptides; 6.2.3 Arylamides; 6.2.4 -Peptoid--Peptide Hybrid Oligomers 6.2.5 Oligourea and 4-Peptide-Based Oligomers 6.2.6 AApeptides; 6.2.6.1 -AApeptides; 6.2.6.2 -AApeptides; 6.3 Discussion; Acknowledgments; References; Chapter 7 Synthetic Biology and Therapies for Infectious Diseases; 7.1 Current Challenges in the Treatment of Infectious Diseases; 7.2 Introduction to Synthetic Biology; 7.3 Vaccinology; 7.3.1 Genetic Engineering and Vaccine Development; 7.3.2 Rational Antigen Design Through Reverse Vaccinology; 7.4 Bacteriophages: A Re-emerging Solution?; 7.4.1 A Brief History of Bacteriophages 7.4.2 Addressing the Problem of the Restricted Host Range of Phages

Sommario/riassunto

By integrating knowledge from pharmacology, microbiology, molecular medicine, and engineering, researchers from Europe, the U.S. and Asia cover a broad spectrum of current and potential antimicrobial medications and treatments. The result is a comprehensive survey ranging from small-molecule antibiotics to antimicrobial peptides and their engineered mimetics, from enzymes to nucleic acid therapeutics, from metallic nanoparticles to photo- and sonosensitizers and to phage therapy. In each case, the therapeutic approaches are compared in terms of their mechanisms, likelihood to induce resistance
