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Titolo	Antibacterial Drug Discovery to Combat MDR : Natural Compounds, Nanotechnology and Novel Synthetic Sources / / edited by Iqbal Ahmad, Shamim Ahmad, Kendra P. Rumbaugh
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Descrizione fisica	1 online resource (XII, 680 p. 63 illus., 31 illus. in color.)
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Nota di contenuto	Antibacterial drug discovery: perspective insights -- Section A: The Challenge of Antibiotic Resistance and Tolerance -- Problematic Groups of Multidrug Resistant Bacteria and their Resistance Mechanisms -- Emergence and spread of multi-drug resistance in ocular bacterial pathogens: A current update -- Antibiotic resistance in Campylobacter jejuni: mechanism, status and public health significance -- Mechanisms of biofilm development, antibiotic resistance & tolerance and their role in persistent infections -- Developing in vivo infection models with MDR pathogens for evaluating compound efficacy -- Section B. New antibiotic drug discovery approaches and progress -- Endophytes: a hidden treasure of novel antimicrobial metabolites -- Alternative therapies to antibiotics to combat drug-resistant bacterial pathogens -- In silico molecular modeling: key technologies in the drug discovery process to combat multidrug resistance --

Computationalapproaches for antibacterial drug discovery -- Efflux pump inhibitors and their role in the reversal of drug resistance -- Medicinal plants as a reservoir of new structures for anti-infective compounds -- Essential oils: Potential application in disease management -- Exploration of soil resistome through a metagenomic approach -- Actinomycetes as a continued source of new antibacterial leads -- Are Ancient Remedies the New Answer to Fighting Infections? -- Section C. Alternative antibiotic resistance treatment strategies -- Pre and probiotics: Using functional foods in the fight against microbial resistance to antibiotics -- Combination of drugs: an effective approach for enhancing the efficacy of antibiotics to combat drug resistance -- Targeted delivery of antibiotics using microparticles to combat multi-drug-resistant tuberculosis -- Practical applications of bacteriophage therapy: biofilms to bedside -- Inhibition of Quorumsensing; prospects in disease control -- Approaches for disrupting tissue-associated biofilms -- Nanomedicine and nanoemulsion in increasing the availability of antibiotics -- Nanoparticles as new emerging antibacterials: potential and limitation -- Nanomaterials as a novel class of anti-infective agents that attenuate bacterial quorum sensing -- Nanoparticle-based drug delivery systems: promising approaches against bacterial infections -- Green synthesis of metal nanoparticles: characterization and their antibacterial efficacy.

Sommario/riassunto

This book compiles the latest information in the field of antibacterial discovery, especially with regard to the looming threat of multi-drug resistance. The respective chapters highlight the discovery of new antibacterial and anti-infective compounds derived from microbes, plants, and other natural sources. The potential applications of nanotechnology to the fields of antibacterial discovery and drug delivery are also discussed, and one section of the book is dedicated to the use of computational tools and metagenomics in antibiotic drug discovery. Techniques for efficient drug delivery are also covered. The book provides a comprehensive overview of the progress made in both antibacterial discovery and delivery, making it a valuable resource for academic researchers, as well as those working in the pharmaceutical industry.