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Nota di contenuto	Part 1: Introduction -- Chapter 1: Preface: Biofilms 101 -- Chapter 2: Antimicrobial and innate immune tolerance mechanisms in biofilms -- Chapter 3: Antibiotic resistance development in bacterial biofilms -- Part 2: Biofilm Prevention & Treatment -- Chapter 4: Prevention of biofilms in catheter-associated urinary tract infections -- Chapter 5: Probiotics' action against biofilms -- Chapter 6: Clinical translation of biofilm dispersal agents -- Chapter 7: Chemical regulation of Pseudomonas aeruginosa biofilm formation as a potential treatment for persistent infections -- Chapter 8: Bacteriophages for the treatment of biofilm-associated infections -- Chapter 9: Hyperbaric oxygen treatment may advance the outcome of antibiotic treatment of biofilm infections -- Chapter 10: Cold plasma therapy as a physical antibiofilm approach -- Chapter 11: Antibodies against biofilms: Mechanisms and applications -- Chapter 12: Host defense peptides: Multifront attack on biofilms -- Chapter 13: Learning from nature: Naturally derived

remedies -- Chapter 14: Historical medical remedies as potential anti-biofilm approaches: Can we look back to move forward? -- Part 3: Biofilm Control -- Chapter 15: The action of phytochemicals in the control of pathogenic biofilms -- Chapter 16: Current and future applications to control polymicrobial biofilms associated with oral disease -- Chapter 17: Clinical management of fungal biofilm infections -- Chapter 18: Metal-based nanoparticles for biofilm treatment and infection control: From basic research to clinical translation -- Chapter 19: Nitric oxide-mediated dispersal as an adjunctive strategy for the control of biofilm-associated infection -- Chapter 20: Biofouling control in water filtration systems -- Chapter 21: Biofilm in equine and other veterinary wounds.

Sommario/riassunto

Bacteria and fungi are able to aggregate together or on surfaces in densely packed microcolonies, facilitated by extracellular polymeric substances for cell protection and stability. These biofilms have proven to be extremely hard to eradicate and remove once established. In chronic infections, this condition can result in a high degree of morbidity and mortality as regular antibiotic treatments are ineffective against biofilms. In industrial facilities, the formation of biofilms can ruin production and result in enormous financial losses. In this book, the current state of antibiofilm research is presented by experts from around the world. Novel, cutting-edge techniques and new optimized strategies based on established methods are discussed in chapters focused on biofilm prevention, treatment and control for the application in clinical, industrial and veterinary settings. Antibiofilm strategies, such as chemical and enzymatic treatments, surface modification and coatings, quorum sensing inhibition and dispersal induction, phage therapy, cold plasma treatment, hyperbaric oxygen treatment, and metal-based nanomedicine are covered, among many others. This book contributes to the UN’s Sustainable Development Goal 3: Good Health and Well-Being and is a valuable resource for healthcare professionals, microbiologists, academics and for educators to inform curricula of universities and colleges.