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Soggetti	Bacteriophages - Therapeutic use Antibacterial agents
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Nota di contenuto	Contents; Contributors; Current books of interest; Foreword; Introduction; Part I: Characteristics of Phages as Antibacterial Agents; 1: General Characteristics of Bacteriophages; Introduction; Discovery; Basic phage techniques (Carlson, 2005); Habitats and ecology; Phage life; Host range; Classification; Genomics; Practical aspects of phage research; Electron microscopy for rapid diagnosis (Ackermann and Heldal, 2009; Ackermann, 2009); Outlook; 2: The First Step to Bacteriophage Therapy: How to Choose the Correct Phage; Introduction: therapeutic phages - what requirements should they meet? Environmental sources of therapeutic phagesA brief overview of phage isolation methods; The selection of phages that infect encapsulated bacterial cells; Preliminary grouping of phage isolates; Pre-selection of potential therapeutic phages; Perspectives for the prediction of phage therapeutic efficacy; Purification of phage lysates; Bacteriophage stability; Host range determination; Bacterial strains for therapeutic phage propagation; Bacterial phage resistance - is it a concern?; Concluding remarks; 3: Bacteriophages as Drugs: The Pharmacology of Phage Therapy; Introduction; Pharmacology

Primary pharmacodynamics; Secondary pharmacodynamics; Accumulation rates; Concentrations; Absorption and distribution; Spectrum of activity; Development issues; Conclusion; 4: Fighting Bacteriophage Infection: Mechanisms of Bacterial Resistance; Introduction; Preventing phage adsorption; Preventing phage DNA entry; Degradation of phage nucleic acids; Abortive infection systems; Conclusion; 5: Non-bactericidal Effects of Phages in Mammals; Introduction; Phages and cell adhesion; Overview of main aspects of phage antigenicity; The influence of phages on cytokine production; Phage influence on phagocytosis and oxidative burst; Engineered phages as vaccines; Phages and pathogenic viruses of mammals; Remarks on bacterial remains in phage preparations; Conclusions; Part II: Applications of Phages and Phage-derived Enzymes as Antibacterials; 6: Overview of Therapeutic Applications of Bacteriophages; The use of lytic phages; The therapeutic use of phage lysins; Genetically engineered phages; Phages as delivery vectors; 7: Considerations for Using Bacteriophages in Plant Pathosystems; Introduction; Impediments in using phage therapy in plant pathology; Future considerations for improving phage efficacy; Phages as part of integrated management strategy; Conclusions; 8: Bacteriophage Therapy in Animal Production; Introduction; Bacteriophage therapy in poultry production; Bacteriophage therapy in swine production; Bacteriophage therapy in beef, dairy and cattle production; Bacteriophage therapy in aquaculture; General discussion; 9: The Use of Phages as Biocontrol Agents in Foods; Introduction; Bacteriophages as biocontrol agents; The use of phages as biocontrol agents against specific food-borne bacteria; Main factors that determine the efficacy of phages as biocontrol agents

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## Sommario/riassunto

The emergence of bacteria resistant to multiple antibiotics has become a serious threat to public health and is considered one of the greatest challenges for contemporary medicine. Phage therapy - the use of bacteriophages as anti-bacterial agents - may offer an alternative treatment for bacterial infections. Phages have many potential applications in human medicine, as well as in dentistry, veterinary science, agriculture, and food protection. Written by internationally recognized experts from leading centers involved in phage research and phage therapy, this book provides comprehensive cover

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