1. Record Nr. UNINA9910409687503321

Titolo	Biocommunication of phages / / edited by Guenther Witzany
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-45885-7
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (499 pages)
Disciplina	579.26
Soggetti	Bacteriophages Communication in biology Bacteriòfags Microbiologia Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. What Does Communication of Phages Mean? -- Chapter 2. Phage-Phage, Phage-Bacteria, and Phage-Environment Communication -- Chapter 3. Phage communication and the ecological implications on microbial interactions, diversity, and function -- Chapter 4. Phage-Phage Interactions -- Chapter 5. Social interactions among bacteriophages -- Chapter 6. Phage protein interactions in the inhibition mechanism of bacterial cell -- Chapter 7. Are phages parasites or symbionts of bacteria? -- Chapter 8. Microbial communication networks: sketching a methodology to analyze communication involving bacteriophages inside environmental communities -- Chapter 9. Information stored in a phage particle: Lactobacillus delbrueckii bacteriophage LL-H as a case -- Chapter 10. Archaeal viruses and their interactions with CRISPR-Cas systems -- Chapter 11. Filamentous phages affect virulence of the phytopathogen Ralstonia solanacearum -- Chapter 12. Intra-population interactions and the evolution of RNA phages -- Chapter 13. ssRNA phages: life cycle, structure and applications -- Chapter 14. Phages as therapy or "dietary supplements"against multiresistant bacteria? -- Chapter 15. Bacteriophage application and biological safety (or how should I train

my dog not to bite me) -- Chapter 16. Phage therapy: an alternative to antibiotics -- Chapter 17. Bacteriophage as a therapeutic agent to combat bacterial infection: A journey from history to application -- Chapter 18. Phagetherapy: Clinical applications – Critical appraisal of randomized controlled trials -- Chapter 19. Bacteriophage therapies targets multiple diseases caused by protein misfolding -- Chapter 20 -- Phage Therapy in Cystic Fibrosis. Challenges and Perspectives -- Chapter 21. Bacteriophage Applications for Food Safety -- Chapter 22. Bacteriophages for environmental applications: Effect of trans-organismic communication on wastewater treatments.

Sommario/riassunto

This is the first book to systemize all levels of communicative behavior of phages. Phages represent the most diverse inhabitants on this planet. Until today they are completely underestimated in their number, skills and competences and still remain the dark matter of biology. Phages have serious effects on global energy and nutrient cycles. Phages actively compete for host. They can distinguish between ‘self’ and ‘non-self’ (complement same, preclude others). They process and evaluate available information and then modify their behaviour accordingly. These diverse competences show us that this capacity to evaluate information is possible owing to communication processes within phages (intra-organismic), between the same, related and different phage species (interorganismic), and between phages and non-phage organisms (transorganismic). This is crucial in coordinating infection strategies (lytic vs. lysogenic) and recombination in phage genomes. In 22 chapters, expert contributors review current research into the varying forms of phage biocommunication and Phagetherapy. Biocommunication of Phages aims to assess the current state of research, to orient further investigations on how phages communicate with each other to coordinate their behavioral patterns, and to inspire further investigation of the role of non-phage viruses (non-lytic, non-prokaryotic) in these highly dynamic interactional networks.