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Nota di contenuto	Part 1: Horizontal gene transfer among bacteria and bacteriophages -- Chapter 1: Horizontal gene transfer in bacteria, an overview of the mechanisms involved -- Chapter 2: Alternative ways to exchange DNA: unconventional conjugation among bacteria -- Chapter 3: Horizontal gene transfer between bacteriophages and bacteria: Antibiotic resistances and toxin production -- Chapter 4: Genomic islands and the evolution of multidrug-resistant bacteria Mario Juhas -- Chapter 5: Horizontal gene transfer and genome evolution in the phylum Actinobacteria -- Chapter 6: Photobacterium damselae: How horizontal

gene transfer shaped two different pathogenic lifestyles in a marine bacterium -- Part 2: Horizontal gene transfer between bacteria and animals, plants, amoeba and fungi -- chapter 7: Horizontal gene transfer in Metazoa: Examples and Methods -- Chapter 8: Horizontal gene transfer between Wolbachia and animals -- Chapter 9: Horizontal gene transfer in obligate parasites -- Chapter 10: Association between Horizontal gene transfer and Adaptation of gastric human pathogen Helicobacter pylori to host -- Chapter 11: The Rhizobiaceae bacteria transferring genes to higher plants Martha -- Chapter 12: Role of horizontal gene transfer in evolution of plant genome -- Chapter 13: Fungal horizontal gene transfer: a history beyond the Phylogenetic Kingdoms -- Chapter 14: Transfer of secondary metabolite gene clusters: assembly and reorganization of the b-lactam gene cluster from bacteria to fungi and arthropods -- Chapter 15: Horizontal gene transfer Among Neisseria species and humans -- Chapter 16: Implications of Lateral or Horizontal Gene Transfer from Bacteria to the Human Gastro-Intestinal System for Cancer Development and Treatment -- Chapter 17: Role of Horizontal Gene Transfer in Cancer Progression. .

Sommario/riassunto

The book focuses on the evolutionary impact of horizontal gene transfer processes on pathogenicity, environmental adaptation and biological speciation. Newly acquired genetic material has been considered as a driving force in evolution for prokaryotic genomes for many years, with recent technical developments advancing this field further. However, the extent and implications of gene transfer between prokaryotes and eukaryotes still raise controversies. This multi-authored volume introduces various means by which DNA can be exchanged, covers gene transfer between prokaryotes and their viruses as well as between bacteria and eukaryotes, such as fungi, plants and animals, and addresses the role of horizontal gene transfer in human diseases. Aspects discussed also include the relevance for virulence and drug resistance development on one hand, and for the occurrence of naturally derived antibiotics and other secondary metabolites on the other hand. This book offers new insights to anyone interested in genome evolution and the exchange of DNA between the different domains of life, the genetic toolkit for adaptation and the emergence of multidrug resistant bacteria. .