1. Record Nr. UNINA9910555144203321

Titolo	Molecular genetics of mycobacteria / / edited by Graham F. Hatfull and William R. Jacobs, Jr
Pubbl/distr/stampa	Washington, District of Columbia : , : ASM Press, , 2014 ©2014
ISBN	1-68367-342-5 1-68367-100-7 1-55581-884-6
Edizione	[2nd edition.]
Descrizione fisica	1 online resource (xviii, 805 pages) : illustrations (some color)
Disciplina	579.374135
Soggetti	Mycobacteria Bacterial genetics Tuberculosis - Genetic aspects Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Cover; Half Title; Title Page; Copyright; Contents; Contributors; Preface; I. Genomes, Genomics, and Genetic Exchange; Chapter 1: Gene Transfer in Mycobacterium tuberculosis: Shuttle Phasmids to Enlightenment; OVERVIEW OF KEY MUTATIONS THAT FACILITATED GENE TRANSFER IN M. TUBERCULOSIS; GENE TRANSMISSION ESTABLISHED PHENOTYPE CAUSALITY; ELUCIDATING THE MECHANISMS OFDRUG KILLING: THE STREPTOMYCIN EXAMPLE; TRANSFER OF GENES FROM PATHOGENIC MYCOBACTERIA INTO THE SURROGATE HOST E. COLI: GREAT PROMISE WITH LIMITATIONS INTRODUCTION OF FOREIGN DNA INTO MYCOBACTERIA: SHUTTLE PHASMIDS AND THE DEVELOPMENT OF A PLASMID TRANSFORMATION SYSTEM FOR M. SMEGMATISSECOND GENERATION SHUTTLE PHASMIDS: REPORTER MYCOBACTERIOPHAGES, TRANSPOSON DELIVERY, AND SPECIALIZED TRANSDUCTION; HIGH-THROUGHPUT SPECIALIZED TRANSDUCTION; IMAGINING A WORLD WITHOUT TB; Chapter 2: Mycobacterial Pathogenomics and Evolution; INTRODUCTION;

MYCOBACTERIAL GENOMICS; INSIGHTS INTO THE MACROEVOLUTION OF M. TUBERCULOSIS BASED ON COMPARISON WITH M. MARINUM AND MYCOBACTERIUM KANSASII; MICROEVOLUTIONARY GENOMICS OF THE TUBERCLE BACILLI
MYCOBACTERIAL SYSTEMS DISCOVERED BY GENOMICS THAT ARE INVOLVED IN PATHOGENICITYCONCLUSIONS AND PERSPECTIVES; Chapter 3: BCG Vaccines; HISTORY OF BCG SUBSTRAINS; BCG AS AN ATTENUATED MEMBER OF THE M. TUBERCULOSIS COMPLEX; MOLECULAR EVOLUTION AND THE DERIVATION OF BCG SUBSTRAINS; MOLECULAR EVOLUTION AND THE PROPAGATION OF BCG SUBSTRAINS; CONCLUSION AND PERSPECTIVES: ATTENUATION OF VIRULENCE AND PROTECTIVE EFFICACY; REFERENCES; Chapter 4: Distributive Conjugal Transfer: New Insights into Horizontal Gene Transfer and Genetic Exchange in Mycobacteria
CLASSICAL oriT-MEDIATED CONJUGATION: A BRIEF OVERVIEWMYCOBACTERIAL CONJUGATION; DISTRIBUTIVE CONJUGAL TRANSFER; DCT AS AN ENGINE FOR MYCOBACTERIAL EVOLUTION; DCT AS A GENETIC MAPPING TOOL; SUMMARY AND FUTURE PROSPECTSFOR DCT; Chapter 5: Molecular Genetics of Mycobacteriophages; GENERAL ASPECTS OF MYCOBACTERIOPHAGES; MYCOBACTERIOPHAGE GENOMICS; MYCOBACTERIOPHAGE-HOST INTERACTIONS; INTEGRATION SYSTEMS; MYCOBACTERIOPHAGE GENE EXPRESSIONAND ITS REGULATION; GENETIC MANIPULATION OF MYCOBACTERIOPHAGES; APPLICATIONS FOR MYCOBACTERIAL GENETICS; PERSPECTIVES: PAST, PRESENT, AND FUTURE
Chapter 6: Genetics of Phage LysisTHE LYSIS PLAYERS; MYCOBACTERIOPHAGE-MEDIATED LYSIS; APPLICATIONS OF THE LYSIS PROPERTIES; CONCLUDING REMARKS; II. Gene Expression and Regulation; Chapter 7: Sigma Factors: Key Molecules in Mycobacterium tuberculosis Physiology and Virulence; THE FACTORS OF MYCOBACTERIUM TUBERCULOSIS ; Chapter 8: Transcription Factor Binding Site Mapping Using ChIP-Seq; ChIP-Seq METHOD AND PROTOCOL; DATA ANALYSIS; COMPREHENSIVE MAPPING OF TF BINDING SITES IN M. TUBERCULOSIS; VALIDATION OF THE ChIP-Seq SYSTEM; THE DIVERSITY OF TF BINDING IN PROKARYOTES
NONPROMOTER TF BINDING

Sommario/riassunto

A comprehensive collection of perspectives by experts in mycobacterial molecular biology, written by leading experts in the field. This book is an invaluable resource for anyone interested in the molecular genetics and molecular biology of mycobacteria.