

1. Record Nr.	UNINA9910464759903321
Titolo	Microarrays : current technology, innovations and applications // edited by Zhili He, Department of Microbiology and Plant Biology, Institute for Environmental Genomics, University of Oklahoma, Norman, OK, USA
Pubbl/distr/stampa	Norfolk, England : , : Caister Academic Press, , [2014] ©2014
ISBN	1-908230-59-2
Descrizione fisica	1 online resource (258 p.)
Disciplina	572.8636
Soggetti	DNA microarrays 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 and index.
Nota di contenuto	Contents ; Contents ; Contributors; Contributors; Preface; Preface; 1: Microarrays for Microbial Community Analysis at a Glance; Introduction; 1: Microarrays for Microbial Community Analysis at a Glance; Introduction; Microarrays for microbial community analysis at a glance; Microarrays for microbial community analysis at a glance; Key issues for microarray analysis; Key issues for microarray analysis; Applications of microarrays for profiling microbial communities; Applications of microarrays for profiling microbial communities Advantages and limitations of microarrays for microbial community analysis Advantages and limitations of microarrays for microbial community analysis; Conclusions and future directions; Conclusions and future directions; 2: Software Tools for the Selection of Oligonucleotide Probes for Microarrays; Introduction; 2: Software Tools for the Selection of Oligonucleotide Probes for Microarrays; Introduction; General criteria for probe design; General criteria for probe design; Probe design algorithms for microbial DNA microarrays; Probe design algorithms for microbial DNA microarrays Discussion/challenges and future trends Discussion/challenges and future trends; Conclusions; Online resources for oligonucleotide probe design programs and databases; Conclusions; Online resources for

oligonucleotide probe design programs and databases; 3: Development and Evaluation of Functional Gene Arrays with GeoChip as an Example; Introduction; 3: Development and Evaluation of Functional Gene Arrays with GeoChip as an Example; Introduction; FGA development; FGA development; FGA construction and experimental evaluation; FGA construction and experimental evaluation
Core functional gene families covered by GeoChipsCore functional gene families covered by GeoChips; Challenges and future directions; Challenges and future directions; 4: Microarray Data Analysis; Introduction; Microarray image process; 4: Microarray Data Analysis; Introduction; Microarray image process; Microarray data preprocessing; Microarray data preprocessing; Statistical analysis; Statistical analysis; Conclusions/challenges and future trends; Conclusions/challenges and future trends; 5: Microarray of 16S rRNA Gene Probes for Quantifying Population Differences Across Microbiome Samples
IntroductionMicroarray of 16S rRNA Gene Probes for Quantifying Population Differences Across Microbiome Samples; Introduction; PhyloChip G3 data analysis; PhyloChip G3 data analysis; Discussion and future trends; Discussion and future trends; Conclusions; Conclusions; 6: GeoChip Applications in Bioremediation Studies; Introduction; Functional gene arrays for bioremediation studies; 6: GeoChip Applications in Bioremediation Studies; Introduction; Functional gene arrays for bioremediation studies; GeoChip design; GeoChip design; Application of GeoChip to bioremediation studies
Application of GeoChip to bioremediation studies

Sommario/riassunto

Microorganisms are the most diverse group of organisms and play important and distinctive roles in their ecosystems. They interact with their peers and other organisms (e.g., plants, animals) to form a complicated food web, significantly impacting ecosystem functions and services. However, understanding the diversity, composition, structure, function, activity, and dynamics of microbial communities remains challenging. Over the past decade, microarray-based technologies have been developed to address such challenges. This book is focused on current microarray technologies and their application
