1. Record Nr. UNINA9910877991603321

Autore	Semizarov Dimitri
Titolo	Genomics in drug discovery and development / / Dimitri Semizarov, Eric Blomme
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, c2009
ISBN	1-281-93869-6 9786611938697 0-470-40977-0 0-470-40976-2
Descrizione fisica	1 online resource (496 p.)
Altri autori (Persone)	BlommeEric
Disciplina	615/.19
Soggetti	Pharmacogenomics Drug development Genetic toxicology DNA microarrays
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	Genomics in Drug Discovery and Development; Contents; Preface; ACKNOWLEDGMENTS; 1. Introduction: Genomics and Personalized Medicine; 1.1. Fundamentals of Genomics; 1.2. The Concept of Personalized Medicine; 1.3. Genomics Technologies in Drug Discovery; 1.4. Scope of This Book; References; 2. Genomics Technologies as Tools in Drug Discovery; 2.1. Introduction to Genomics Technologies; 2.2. Gene Expression Microarrays: Technology; 2.2.1. Standard Microarray Protocol; 2.2.2. Monitoring the Quality of Input RNA for Microarray Experiments 2.2.3. Specialized Microarray Protocols for Archived and Small Samples2.2.4. Quality of Microarray Data and Technical Parameters of Microarrays; 2.2.5. Reproducibility of Expression Microarrays and Cross-Platform Comparisons; 2.2.6. Microarray Databases and Annotation of Microarray Data; 2.2.6.1. Target Identification; 2.2.6.2. Disease Classification; 2.2.6.3. Compound Assessment; 2.3. Gene Expression Microarrays: Data Analysis; 2.3.1. Identification of Significant Gene Expression Changes; 2.3.2. Sample Classification and

Class Prediction with Expression Microarrays
2.3.3. Pathway Analysis with Gene Expression Microarrays2.3.4. Common Problems Affecting the Validity of Microarray Studies; 2.4. Comparative Genomic Hybridization: Technology; 2.5. Comparative Genomic Hybridization: Data Analysis; 2.6. Microarray-Based DNA Methylation Profiling; 2.7. Microarray-Based MicroRNA Profiling; 2.8. Technical Issues in Genomics Experiments and Regulatory Submissions of Microarray Data; 2.8.1. Study of a Drug's Mechanism of Action by Gene Expression Profiling; 2.8.2. Early Assessment of Drug Toxicity in Model Systems
2.8.3. Biomarker Identification in Discovery and Early Development2.8.4. Patient Stratification in Clinical Trials with Gene Expression Signatures; 2.8.5. Genotyping of Patients in Clinical Studies to Predict Drug Response; 2.9. Conclusion; References; 3. Genomic Biomarkers; 3.1. Introduction to Genomic Biomarkers; 3.2. DNA Biomarkers; 3.2.1. DNA Copy Number Alterations; 3.2.1.1. DNA Copy Number Alterations in Cancer; 3.2.1.2. DNA Copy Number Alterations in Other Diseases; 3.2.1.3. Identification of DNA Copy Number Biomarkers in Drug Discovery; 3.2.2. Mutations; 3.2.2.1. p53 Mutations
3.2.2.2. K-ras Mutations3.2.2.3. EGFR Mutations; 3.2.2.4. Bcr-abl and KIT Mutations; 3.2.3. Epigenetic Markers; 3.3. RNA Biomarkers; 3.3.1. Gene Expression Biomarkers Validated as Diagnostic Tests; 3.3.2. Other Examples of Gene Expression Biomarkers; 3.4. Clinical Validation of Genomic Biomarkers; References; 4. Fundamental Principles of Toxicogenomics; 4.1. Introduction; 4.2. Fundamentals of Toxicogenomics; 4.2.1. Principle of Toxicogenomics; 4.2.2. Technical Reproducibility; 4.2.3. Biological Reproducibility; 4.2.4. Species Extrapolation; 4.3. Analysis of Toxicogenomics Data
4.3.1. Compound-Induced Gene Expression Changes

Sommario/riassunto

Early characterization of toxicity and efficacy would significantly impact the overall productivity of pharmaceutical R&D and reduce drug candidate attrition and failure. By describing the available platforms and weighing their relative advantages and disadvantages, including microarray data analysis, Genomics in Drug Discovery and Development introduces readers to the biomarker, pharmacogenomic, and toxicogenomics toolbox. The authors provide a valuable resource for pharmaceutical discovery scientists, preclinical drug safety department personnel, regulatory personnel, discovery toxicologists