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3.3 Blood Collection, Processing, and Storage; 3.4 Tissue Collection, Processing, Archiving, and Annotation; 3.4.1 Tissue Collection; 3.4.2 Tissue Processing; 3.4.3 Tissue Archiving and Storage; 3.4.4 Pathologic Characterization of Tissue Samples; 3.5 Conclusion; References; Chapter 4 Biological Perspective; 4.1 Background for "Omics" Technologies; 4.2 Basic Biology and Definitions; 4.2.1 A Historical Perspective; 4.2.2 Biological Processes; 4.2.3 Some Definitions; 4.3 Very Basic Biochemistry; 4.3.1 DNA; 4.3.2 RNA; 4.3.3 Proteins; 4.4 Summary; References; Chapter 5 Genomics Studies. 5.1 Introduction; 5.2 Genomic Technologies Used for DNA Analysis; 5.2.1 DNA Sequencing; 5.2.1.2 Biomedical Informatics Requirements; 5.2.1.3 Future Directions; 5.2.2 Genotyping; 5.2.2.1 Array Technologies; 5.2.2.2 Technological Assessment of Genotyping; 5.2.2.3 Affymetrix Genotyping SNP Assay Workflow; 5.2.2.4 QA/SOP Issues; 5.2.2.5 Biomedical Informatics Requirements; 5.2.2.6 Future Directions; 5.2.3 Array-Based Comparative Genomic Hybridization; 5.2.3.1 Technological Assessment of Chromosomal Rearrangements; 5.2.3.2 Example Platform; 5.2.3.3 QA/SOP Issues. 5.2.3.4 Biomedical Informatics Requirements; 5.2.3.5 Oligo-Based aCGH Platform; 5.3 Genomic Technology Used for RNA Analysis; 5.3.1 Real-Time PCR; 5.3.1.1 Data Analysis Methods; 5.3.1.2 Biomedical Informatics Requirements; 5.3.1.3 Future Directions; 5.3.2 Microarrays; 5.3.2.1 Array Technologies; 5.3.2.2 Example Platform; 5.3.2.3 QA/SOP Issues; 5.3.2.4 MIAME Checklist and Platform Comparison; 5.3.2.5 Data Analysis Issues; 5.3.2.6 Biomedical Informatics Requirements; 5.3.2.7 Future Directions; 5.3.3 Chips for Alternative Splicing Analysis (GeneChip Exon); 5.3.3.1 Array Technology.

Sommario/riassunto

This groundbreaking resource on biomedical informatics gives you step-by-step insight into innovative techniques for integrating and federating data from clinical and high-throughput molecular study platforms as well as from the public domain. It details how to apply computational and statistical technologies to clinical, genomic, and proteomic studies to enhance data collection, tracking, storage, visualization, analysis, and knowledge discovery processes, and to translate knowledge from "bench to bedside" and "bedside to bench" with never-before efficiency. Filling the need for informatic.
