

1. Record Nr.	UNINA9910132173003321
Titolo	Nucleic acids as molecular diagnostics // edited by Andreas Keller and Eckart Meese
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH, , 2015 ©2015
ISBN	3-527-67222-2 3-527-67216-8 3-527-67223-0
Descrizione fisica	1 online resource (393 p.)
Disciplina	574.87328
Soggetti	Nucleic acids Molecular diagnosis
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	Nucleic Acids as Molecular Diagnostics; Contents; List of Contributors; Preface; 1 Next-Generation Sequencing for Clinical Diagnostics of Cardiomyopathies; 1.1 Introduction; 1.2 Cardiomyopathies and Why Genetic Testing is Needed; 1.3 NGS; 1.4 NGS for Cardiomyopathies; 1.5 Sample Preparation; 1.6 Bioinformatics Analysis Pipeline; 1.7 Interpretation of Results and Translation into Clinical Practice; References; 2 MicroRNAs as Novel Biomarkers in Cardiovascular Medicine; 2.1 Introduction; 2.2 miRNAs are Associated with Cardiovascular Risk Factors; 2.3 miRNAs in Coronary Artery Disease 2.4 miRNAs in Cardiac Ischemia and Necrosis 2.5 miRNAs as Biomarkers of Heart Failure; 2.6 Future Challenges; Acknowledgments; References; 3 MicroRNAs in Primary Brain Tumors: Functional Impact and Potential Use for Diagnostic Purposes; 3.1 Background; 3.2 Gliomas; 3.2.1 miRNA as Biomarkers in Glioma Tissue; 3.2.2 Circulating miRNA as Biomarkers; 3.3 Meningiomas; 3.4 Pituitary Adenomas; 3.5 Medulloblastomas; 3.6 Other Brain Tumors; 3.6.1 Schwannomas; 3.6.2 PCNSLs; 3.7 Summary and Outlook; References; 4 Genetic and Epigenetic Alterations in Sporadic Colorectal Cancer: Clinical Implications

4.1 Introduction 4.2 Chromosomal Instability; 4.3 Microsatellite Instability; 4.4 Driver Somatic Mutations in CRC; 4.4.1 APC; 4.4.2 TP53; 4.4.3 KRAS; 4.4.4 BRAF; 4.4.5 PIK3CA; 4.4.6 Other Mutations; 4.5 Epigenetic Instability in CRC; 4.6 Hypomethylation; 4.7 CpG Island Methylator Phenotype; 4.8 Concluding Remarks; References; 5 Nucleic Acid-Based Markers in Urologic Malignancies; 5.1 Introduction; 5.2 Bladder Cancer; 5.2.1 Hereditary Factors for Bladder Cancer; 5.2.2 Single Nucleotide Polymorphisms; 5.2.3 RNA Alterations in Bladder Cancer; 5.2.3.1 FGFR3 Pathway; 5.2.3.2 p53 Pathway 5.2.3.3 Urine-Based Markers 5.2.3.4 Serum-Based Markers; 5.2.4 Sporadic Factors for Bladder Cancer; 5.2.5 Genetic Changes in Non-Invasive Papillary Urothelial Carcinoma; 5.2.5.1 FGFR 3; 5.2.5.2 Changes in the Phosphatidylinositol 3-Kinase Pathway; 5.2.6 Genetic Changes in Muscle-Invasive Urothelial Carcinoma; 5.2.6.1 TP53, RB, and Cell Cycle Control Genes; 5.2.6.2 Other Genomic Alterations; 5.2.7 Genetic Alterations with Unrecognized Associations to Tumor Stage and Grade; 5.2.7.1 Alterations of Chromosome 9; 5.2.7.2 RAS Gene Mutations; 5.3 Prostate Cancer 5.3.1 Hereditary Factors for Prostate Cancer 5.3.2 Sporadic Factors for Prostate Cancer; 5.3.2.1 PSA and Other Protein Markers; 5.3.2.2 Nucleic Acid Biomarkers; 5.3.3 Prostate Cancer: Summary; 5.4 Renal Cell Carcinoma; 5.4.1 Hereditary Factors for RCC; 5.4.2 Sporadic Factors for RCC; 5.4.2.1 The Old; 5.4.2.2 The New; 5.5 Summary; References; 6 From the Genetic Make-Up to the Molecular Signature of Non-Coding RNA in Breast Cancer; 6.1 Introduction; 6.2 Molecular Breast Cancer Detection; 6.2.1 Circulating Free DNA; 6.2.2 Long Intergenic Non-Coding RNA; 6.2.2.1 HOTAIR; 6.2.2.2 H19; 6.2.2.3 GAS5 6.2.2.4 LSINCT5

Sommario/riassunto

By integrating technology, supporting infrastructure and efficient application, this all-in-one guide presents molecular diagnostics as an essential component of modern, personalized clinical practice. It considers all important aspects, from the hardware and software needed, to recent improvements in blood- and non-blood-based biomarker tests. Chapters on ethical challenges and a look at current trends and the latest innovations are also included. Bridging the gap between industry and academia, this is a highly useful resource for practitioners as well as for developers of modern, DNA- and RNA
