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Nota di contenuto	Contents; Contributors; Current books of interest; Foreword; Biographies; 1: Molecular Diagnostics: An Introduction; Part I: Molecular Diagnostics in Cancer: Research and Development of Biomarkers; 2: Transcriptome-based Biomarkers: A Road Map Exemplified for Peripheral Blood-based Biomarker Discovery, Development and Clinical Use; Introduction; Defining biomarker classes as a prerequisite for successful biomarker development; Focus on peripheral blood-based biomarkers as an example; Blood transcriptomics started in leukaemia research Is there a role for blood transcriptomics in other diseases?Is there a role of blood transcriptomics for early detection of disease?; General guidance towards successful biomarker development; Importance of technical and organizational aspects during biomarker development; Requirements for bioinformatics analysis during biomarker development; The next decade of blood transcriptomics; 3: Development of Methylation Biomarkers for Clinical Applications and Methylation-sensitive High-resolution Melting Technology; DNA methylation; Methylation-based in vitro diagnostic tests Fields of applications of in vitro diagnostic testsChallenges of methylation biomarker development process; Methylation biomarker development workflow; PCR amplification and melting analyses in

methylation studies; Development of methylation-sensitive high-resolution melting (MS-HRM); Characteristics of the MS-HRM protocol; Final remarks; 4: Genetic and Epigenetic Biomarkers of Colorectal Cancer ; Introduction; Biomarkers; Biomarker location; Practical limitations; Conclusions and outlook; Part II: Molecular Diagnostics of Infectious Diseases: Past, Present and Future
5: Molecular Diagnosis in Medical Microbiology: The Horizon Draws NearIntroduction; Enhancing diagnosis; Molecular typing in control of infection; Molecular tools in screening/high-throughput analysis; Considerations in selecting a molecular tool; Conclusion; 6: Viral Diagnostics and qPCR-based Methodologies; Introduction; PCR-based methods; Non-PCR-based methods; Perspectives; Validation/standardization/harmonization; Conclusions; 7: XMRV: A Cautionary Tale; Introduction; Discovery of XMRV; Reports of XMRV in prostate cancer and chronic fatigue syndrome
Mounting negative evidence ignites XMRV controversyHuman pathogen or laboratory contaminant?; The recombinant origin of XMRV; Denouement and conclusions; Note added in proof; 8: Ancient DNA and the Fingerprints of Disease: Retrieving Human Pathogen Genomic Sequences from Archaeological Remains Using Real-time Quantitative Polymerase Chain Reaction; Introduction; aDNA breakdown after deposition; Why study aDNA and what can it tell us?; Sampling and measures to avoid cross-contamination; PCR; Validation of PCR findings; Conclusions; Part III: From Bench to Bedside
9: Point-of-care Nucleic Acid Testing: User Requirements, Regulatory Affairs and Quality Assurance

Sommario/riassunto

The application of molecular technology in clinical diagnosis is a rapidly developing area and is predicted to greatly improve the speed, efficiency, and accuracy of diagnostic medicine. The editors of this book have commissioned an excellent series of chapters representing two key molecular diagnostic areas: cancer and infectious diseases. The cancer section deals with the challenges in identifying genetic, epigenetic, and transcriptomic biomarkers. The infectious disease section describes the current clinical applications of molecular diagnostics for the detection of viral, bacterial, and fu
