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Nota di contenuto	Title Page; Copyright; Table of Contents; List of Contributors; Foreword; References; Preface; Part I: Introduction; Chapter 1: Circulating Tumor Cells and Historic Perspectives; 1.1 Early Studies on Cancer Dormancy Led to the Development of a Sensitive Assay for CTCs (1970-1998); 1.2 Modern Era for Counting CTCs: 1998-2007; 1.3 Proof of Malignancy of CTCs; 1.4 New Experiments Involving CTCs; 1.5 Clinical Cancer Dormancy; 1.6 Human Epidermal Growth Factor Receptor 2 (HER2) Gene Amplification can be Acquired as Breast Cancer Progresses; 1.7 uPAR and HER2 Co-amplification 1.8 Epithelial-Mesenchymal Transition (EMT)1.9 New Instruments to Capture CTCs; 1.10 Genotypic Analyses; 1.11 Conclusions; References; Chapter 2: Introduction to Microfluidics; 2.1 Introduction; 2.2 Scaling Law; 2.3 Device Fabrication; 2.4 Functional Components in Microfluidic Devices; 2.5 Concluding Remarks; References; Part II: Isolation Methods; Chapter 3: Ensemble-decision Aliquot Ranking (eDAR) for CTC Isolation and Analysis; 3.1 Overview of eDAR; 3.2 Individual Components and Analytical Performance of eDAR; 3.3 Application and Downstream Analyses of eDAR; 3.4 Conclusion and Perspective ReferencesChapter 4: Sinusoidal Microchannels with High Aspect Ratios for CTC Selection and Analysis; 4.1 Introduction; 4.2 Parallel Arrays of High-Aspect-Ratio, Sinusoidal Microchannels for CTC Selection; 4.3

Clinical Applications of Sinusoidal CTC Microchip; 4.4 Conclusion; Acknowledgments; References; Chapter 5: Cell Separation Using Inertial Microfluidics; 5.1 Introduction; 5.2 Device Fabrication and System Setup; 5.3 Inertial Focusing in Microfluidics; 5.4 Cancer Cell Separation in Straight Microchannels; 5.5 Cancer Cell Separation in Spiral Microchannels; 5.6 Conclusions; References

Chapter 6: Morphological Characteristics of CTCs and the Potential for Deformability-Based Separation 6.1 Introduction; 6.2 Limitations of Antibody-based CTC Separation Methods; 6.3 Morphological and Biophysical Differences Between CTCs and Hematological Cells; 6.4 Historical and Recent Methods in CTC Separation Based on Biophysical Properties; 6.5 Microfluidic Ratchet for Deformability-Based Separation of CTCs; 6.6 Resettable Cell Trap for Deformability-based Separation of CTCs; 6.7 Summary; References

Chapter 7: Microfabricated Filter Membranes for Capture and Characterization of Circulating Tumor Cells (CTCs) 7.1 Introduction; 7.2 Size-based Enrichment of Circulating Tumor Cells; 7.3 Comparison Between Size-based CTC Isolation and Affinity-based Isolation; 7.4 Characterization of CTCs Captured by Microfilters; 7.5 Conclusion; References; Chapter 8: Miniaturized Nuclear Magnetic Resonance Platform for Rare Cell Detection and Profiling; 8.1 Introduction; 8.2 NMR Technology; 8.3 Clinical Application of NMR for CTC Detection and Profiling; 8.4 Conclusion; References

Chapter 9: Nanovelcro Cell-Affinity Assay for Detecting and Characterizing Circulating Tumor Cells
