1. Record Nr. UNINA9910254499403321

Titolo	Circulating Tumor Cells / / edited by Richard J. Cote, Ram Datar
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2016
ISBN	1-4939-3363-9
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (345 p.)
Collana	Current Cancer Research, , 2199-2584
Disciplina	616.994
Soggetti	Cancer research Cancer Research
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	Preface -- Foreword -- Section I. Technologies for CTC Identification -- 1. Significance of Studying Circulating Tumor Cells -- 2. Affinity-Based Enrichment of Circulating Tumor Cells -- 3. Size-Based and Non-Affinity Based Microfluidic Devices for Circulating Tumor Cell Enrichment and Characterization -- 4. Molecular Assays for the Detection and Molecular Characterization of CTCs -- 5. Cancer Stem Cells and Circulating Tumor Cells Molecular Markers, Isolation Techniques and Clinical Implications -- Section II. Fundamental Studies of CTC -- 6. Circulating Tumor Cells and Tumor Dormancy -- 7. Prevention of Conversion of Tumor Dormancy into Proliferative Metastases -- 8. Genesis of Circulating Tumor Cells through Epithelial-Mesenchymal Transition as a Mechanism for Distant Dissemination -- Section III. CTC Analysis -- 9. CTC Analysis FISH, ISH, Array-CGH and Other Molecular Assays -- 10. Genome-Wide Gene Copy Number Analysis of Circulating Tumor Cells -- 11. Perspectives on the Functional Characterization and In Vitro Maintenance of Circulating Tumor Cells -- 12. Prognostic Implications of CTC in Breast Cancer -- Section IV. Potential Clinical Applications of CTC -- 13. CTC in Advanced Breast Cancer Prognosis, Monitoring and Clinical Utility -- 14. Evolution of Metastatic Disease: The Need for Monitoring and Emerging Therapeutic Opportunities -- 15. CTC for Biomarker and Companion Diagnostic Development -- 16. Perspectives on Clinical Applications of CTCs -- Index.

Sommario/riassunto

This volume provides the latest research on circulating tumor cells aimed for cancer researchers, scientists, and molecular oncologists. It presents the basic concepts behind circulating tumor cells (CTCs), metastatic biology, and potential applications as to how CTCs can be used in diagnostic biomarkers. CTCs are cells that have detached from the primary tumor and circulate in the bloodstream. Such cells may become "seeds" for the growth of additional tumors. The field of analysis surrounding cancer metastasis has been steadily growing, and CTCs provide effective biomarkers that can be examined in peripheral blood through a minimally invasive “liquid biopsy” procedure. CTCs offer several exciting applications, not only as markers of disease progression but also as biomarkers of monitoring response to therapy and companion diagnostics for novel anticancer drug development. There has been rapid progress in the field, fueled by research in basic science, biomedical engineering, and clinical applications. This book presents the latest developments from world-wide leaders, and will be useful for anyone interested in this important and expanding field.