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| Nota di contenuto       | CANCER STEM CELLS; CONTENTS; Contributors; Preface; 1 Cancer Stem Cells: Similarities and Variations in the Theme of Normal Stem Cells; 1.1 Introduction; 1.2 Stem Cells in the Life of an Organism; 1.2.1 Stem Cells in Early Development and Fetal Life; 1.2.2 Stem Cells in the Adult Organism; 1.3 Cancer Stem Cells; 1.3.1 Activation of Stem Cells and Cancer; 1.3.2 Isolation and Identification of Cancer Stem Cells; 1.3.3 De Novo Generation of a New Organ (Tumor) by Transformed Stem Cells; 1.4 Self-Renewal and Differentiation in CSCs<br>1.5 CSC Plasticity as Regulated by Intrinsic and Extrinsic Stem Cell Factors<br>1.5.1 Stem Cell Intrinsic Factors: Genetic and Epigenetic Effects; 1.5.2 Stem Cell Extrinsic Effects: Niche Effects and Microenvironmental Signaling; 1.6 Conclusions and Future Perspectives; References; 2 Leukemic Stem Cells; 2.1 Introduction; 2.2 Dysregulation of Hematopoiesis in Leukemia; 2.2.1 Normal Hematopoietic Stem Cell Hierarchies; 2.2.2 Understanding Aberrant Hierarchies in Leukemia; 2.2.3 Types of Leukemia; 2.3 Identification and isolation of Cancer-Initiating Cells in Leukemia |

2.4 Molecular Regulation of Aberrant Hierarchies  
2.4.1 Signaling Pathways Deregulated in Leukemia; 2.4.2 Self-Renewal of Normal and Leukemic Stem Cells; 2.4.3 Epigenetic Effects; 2.4.4 MicroRNA in Leukemia Development; 2.5 Conclusions and Future Perspectives; References;  
3 Isolation and Characterization of Breast and Brain Cancer Stem Cells; 3.1 Introduction; 3.2 Breast Cancer Stem Cells; 3.2.1 Mammary Gland Architecture and Cell Types; 3.2.2 Breast Cancer; 3.2.3 Identification of Breast Cancer Stem Cells  
3.2.4 Putative Breast Cancer Stem Cells that Exhibit the CD44(+) CD24 (-/low)Lin(-) Marker Profile  
3.2.5 ESA(+) Subpopulation of CD24(-low) Lin(-) Cells Enriched by Tumorigenicity; 3.2.6 Tumorigenic Breast Cells Displaying Properties of Stem Cells; 3.2.7 In Vitro Propagation of Breast Cancer Stem Cells as Mammospheres; 3.3 Brain Cancer Stem Cells; 3.3.1 Brain Architecture and Cell Types; 3.3.2 Brain Cancers; 3.3.3 Brain Stem Cells; 3.3.4 Brain Cancer Stem Cells; 3.3.5 Brain Cancer-Derived Cells that Generate Tumor Spheres; 3.4 Conclusions and Future Perspectives; References  
4 Cancer Stem Cell Side Populations  
4.1 Introduction; 4.2 Stem Cell Side Populations; 4.3 Side Populations in Normal Tissue; 4.4 Side Populations in Tumors; 4.5 Overcoming Side Population Limitations; 4.6 Conclusions and Future Perspectives; References;  
5 Evidence for Cancer Stem Cells in Retinoblastoma; 5.1 Introduction; 5.2 Elusive Origins of Retinoblastoma; 5.3 Sources of Retinoblastoma Cells for Study; 5.4 Precedent for Cancer Stem Cells; 5.5 Side Populations in Retinoblastoma; 5.6 Immunoreactivity to Stem Cell Markers in Retinoblastoma; 5.7 Conclusions and Future Perspectives; References  
6 Ovarian Stem Cell Biology and the Emergence of Ovarian Cancer Stem Cells

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Sommario/riassunto

Because the concept and discoveries of cancer stem cells are relatively new, scientists and researchers need an introduction to this dynamic area. Cancer Stem Cells presents a consolidated account of the research done to date and recent progresses in the studies of cancer stem cells. Such a presentation facilitates a better understanding of and draws attention to stem cell and cancer biology - two fields that enhance, move, and evolve into each other continuously. It provides an informative study in designing approaches to apply stem cell principles to cancer biology while offering an overview

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