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Nota di contenuto	Preface; Contents; Editor and Contributors; 1 The Hematopoietic Stem Cell Niche: Cell-Cell Interactions and Quiescence; 1 Introduction; 2 Cell-Cell Interactions; 2.1 Endothelial Cells; 2.2 Mesenchymal-Derived Cells of the Hematopoietic Stem Cell Niche; 2.2.1 Chemokine Ligand 12 Expressing Cells; 2.2.2 Nestin Expressing Cells; 2.2.3 Osteoblasts; 2.2.4 Leptin-Receptor Expressing Cells; 2.2.5 CD146 Expressing Cells; 2.2.6 Bone Cartilage Stromal Progenitor Cells; 3 Other Niche Cells; 3.1 Megakaryocytes; 3.1.1 Non-myelinated Schwann Cells; 3.1.2 Monocytes/Macrophages 3.1.3 Sympathetic Nervous System 4 Hematopoietic Stem Cell Niche Structure and Physiology; 4.1 Integrins; 4.2 Wnts; 4.3 Hypoxia; 4.4 Energetics; 5 Intrinsic Regulators of Cell Cycle; 6 Conclusions; Acknowledgments; References; 2 The Mammalian Limbal Stem Cell Niche: A Complex Interaction Between Cells, Growth Factors and Extracellular Matrix; 1 Introduction; 2 Defining the Limbus as the Residence Site for Corneal Stem Cells; 3 The Limbus: Its Structure and Composition; 3.1 Corneal Epithelial Stem Cells and Their Niche: Cells that Interact with the Limbal Stem Cell Reservoir 3.1.1 Epithelial Cells 3.1.2 Melanocytes; 3.1.3 Langerhans' Cells; 3.1.4 Stromal Cells; 3.1.5 Corneal Innervation; 3.2 Corneal Epithelial Stem

Cells and Their Niche: Basal Membrane and Extracellular Matrix Components; 3.3 Corneal Epithelial Stem Cells and Their Niche: Growth Factors and Cytokines; 4 The Niche as Regulator of Limbal Stem Cells; 5 Corneal Epithelial Stem Cells: Renewal and Wound Healing; 6 Limbal Stem Cells and Therapy; 7 Conclusion; Acknowledgements; References; 3 Emerging Engineering Strategies for Studying the Stem Cell Niche; 1 Introduction; 2 Stem Cells and Their Niches
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 9 Conclusions and Future Directions

Sommario/riassunto

This comprehensive volume explores functions, pathologies, and applications of stem cells in relation to the niches in which they develop. Ten chapters cover the subject in depth, from a historical perspective through signaling, hormonal control, quiescence, biomimetics, epigenetics, engineering strategies for emulating, tumorigenesis and more. The chapter authors represent a broad range of international expertise and perspectives. This installment of the popular Stem Cell Biology and Regenerative Medicine series delivers authoritative, international perspectives on this rapidly growing field. Biology of Stem Cell Niche is an ideal complementary volume to Tissue-Specific Stem Cell Niche and Adult Stem Cells, Second Edition and will be invaluable to clinicians and researchers working with stem cells as well as to postgraduate trainees who are studying them.
