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Nota di contenuto	1 Chronic lung pathologies that require repair and regeneration -- I Stem/stromal cells populations in the lung -- 2 Characterization of stromal/stem cells in the lung and translation of knowledge of stem/stromal cell population to human lung -- 3 Comparison of the regenerative potential for lung tissue of mesenchymal stromal cells from different sources/locations within the body -- 4 The potential of factors released from mesenchymal stromal cells as therapeutic agents in the lung -- II Preclinical evidence and clinical applications in Chronic Lung Diseases -- 5 Preclinical evidence for the role of stem/stromal cells in COPD -- 6 Clinical application of stem/stromal cells in COPD -- 7 Evidence for the role of stem/stromal cells in lung fibrosis -- 8 Preclinical evidence for the role of stem/stromal cells and their therapeutic potential in treating BPD and PAH -- 9 Crispr-Cas9 editing in induced pluripotent stem cells: a way forward for treating Cystic

Fibrosis? -- 10 Clinical application of stem/stromal cells in cystic fibrosis -- 11 Preclinical evidence for the role of stem/stromal cells in targeting ARDS -- 12 The safety and efficiency of addressing ARDS using stem cell therapies in clinical trials -- III Stem cell delivery systems and devices -- 13 Spraying as route of delivery for stem cells to the lungs -- IV Conclusion -- 14 Conclusion.

Sommario/riassunto

This book presents state-of-the-art pre-clinical models and clinical applications of stem-cell-based therapies applied to different lung diseases, with a special focus on the translation of bench data into clinical studies. Starting with the assumption that abnormal lung tissue repair and regeneration has emerged as the driving force underlying pathogenesis and progression in many lung diseases, it sheds new light on the potential of stem/stromal cells as drivers of repair and sources of reparative factors in the lung. The first part of the book offers an overview of stem cell types and mechanisms involved in lung development, homeostasis, repair and regeneration, and reveals the crucial role of the extracellular matrix within the lung microenvironment. In the second part, leading experts present the latest pre-clinical evidence and clinical applications of stem-cell-based therapies in a wide variety of lung diseases, ranging from COPD and lung fibrosis to other rare lung diseases. The last section discusses stem cell delivery systems and devices, such as aerosolised spray application. This book appeals to pneumologists, stem cell and matrix biologists, as well as bioengeneers with a special interest in regenerative medicine applied to pulmonary diseases.