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Titolo	Cardiovascular Applications of Stem Cells / / edited by Khawaja H. Haider
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Descrizione fisica	1 online resource (517 pages)
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Soggetti	Stem cells Blood-vessels - Growth Cardiology Stem Cell Biology Angiogenesis
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1_Recent advances in in vitro generation of mature cardiomyocyte -- Chapter 2_Cardiac Reprogramming with Stem Cells: An Advanced Therapeutic Strategy in Advanced Heart Failure -- Chapter 3_Administration routes for advanced therapy medicinal products in patients with cardiovascular diseases -- Chapter 4_Cardiac Progenitor Cells, their Derivatives and Therapeutic Applications -- Chapter 5_Regenerative medicine: therapeutic insights from young cardiac stem cells -- Chapter 6_Rejuvenation and regenerative potential of heart stem cells -- Chapter 7_Cardiac Stem cells and utilization of atrial appendage microtissues or micrografts in the treatment of heart failure -- Chapter 8_Stem cells and regenerative medicine in valvulopathies -- Chapter 9_Cardiac tissue regeneration based on stem cell therapy -- Chapter 10_Stem Cell Applications in Cardiac Tissue Regeneration -- Chapter 11_Epicardial progenitors and stem cells in the cardiovascular applications -- Chapter 12_Human myoblast genome therapy and the regenerative heart -- Chapter 13_Exosomes and stem cell therapy -- Chapter 14_Mesenchymal stem cells in the clinical perspective for myocardial regeneration and repair -- Chapter 15_Towards the Human Induced Pluripotent Stem Cells

(hiPSC)-derived Exosomes as Therapeutic Intervention for Cardiovascular Diseases -- Chapter 16_Stem cell- derived extracellular vesicles as next generation tools in regenerative medicine -- Chapter 17_Avant-garde Hydrogels as Stem Cell Niche for Cardiovascular Regenerative Medicine -- Chapter 18_Stem cell-derived cardiac organoids: past, present and future -- Chapter 19_Stem cell-based organoid engineering -- Chapter 20_Cardiovascular Stem Cell Applications Animal Models.

Sommario/riassunto

The book covers multifarious aspects of stem cell-based therapy for cardiovascular diseases. In addition to stem cells from different sources for cell-based therapy, it covers stem cell organoids and stem cell-derived exosomes in regenerative medicine. The book also encompasses advances in state-of-the-art infrastructure to improve the maturation aspects of pluripotent stem cells-derived cardiomyocytes using a novel scaffold-based cell culture system for cell delivery in experimental animal models and clinical settings. Besides the use of mesenchymal stem cells, the book includes chapters on the use of cardiac progenitor cells (CPCs), microtissue implantation, use of PSCs for valvulopathies, application of de-cellularized organ arrays as natural scaffolds for cardiac tissue engineering, use of epicardial stem cells, and skeletal myoblasts in cell-based therapy for myocardial regeneration. Besides the cell-based therapy approach, the book also reviews the stem cell-derived exosomes, their characteristics, and engineering strategies to enhance their therapeutic potential via targeting and drug loading and use in disease models. Additionally, the book also discusses the latest research on injectable hydrogels for cardiovascular regeneration and how hydrogel-based delivery protects the cells and their retention post-engraftment in the heart, a problem, which significantly reduces the efficacy of cell-based therapy.