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Descrizione fisica	1 online resource (320 pages)
Collana	Stem Cell Biology and Regenerative Medicine, , 2196-8993 ; ; 69
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Soggetti	Stem cells Medicine - Research Biology - Research Regenerative medicine Biomedical engineering Stem Cell Biology Translational Research Regenerative Medicine and Tissue Engineering Biomedical Engineering and Bioengineering
Lingua di pubblicazione	Inglese
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Nota di contenuto	Basics of stem cell biology -- Types and classifications stem cells -- Method of isolation and characterization of stem cells -- Differentiation of stem cells into neuronal lineage: In vitro cell culture, In vivo transplantation in animal models -- Differentiation of stem cells into cardiomyocyte lineage: In vitro cell culture, In vivo transplantation in animal models -- Differentiation of stem cells into hepatocyte lineage: In vitro cell culture, In vivo transplantation in animal models -- Differentiation of stem cells into pancreatic lineage: In vitro cell culture, In vivo transplantation in animal models -- Application of stem cells in treatment of bone diseases: pre-clinical and clinical perspectives -- Stem cells in regenerative medicine: clinical trials -- Stem cell production: Scale up, GMP production, Bioreactor -- Stem cell based products in the market -- Commercialization, IPR and market of stem

cell products.

Sommario/riassunto

The field of stem cell biology is expanding with a continued surge of new information related to its applications. Over past few years, stem cells have been extensively used in cell therapy, tissue engineering, in vitro drug testing among others. At the moment there is no single book available which comprehensively describes the significance of various application of stem cells derived from embryonic and adult sources from lab to clinics. In this edited volume, we discuss basics and advanced topics of stem cells to help researchers, students and professional find the most important information in a single source of updated information about stem cells and relevant applications. This book is divided in 12 chapters and covers topics such as in vitro cell culture, 3D cell culture, cell therapy, tissue engineering, cell factory, cell functionality, in vitro drug testing, organ development, autologous transplantation, allogeneic transplantation, adult stem cells, multipotent stem cells, induced pluripotent stem cells, a pluripotent and embryonic stem cells.