

1. Record Nr.	UNINA9910462427003321
Titolo	Biomaterials and stem cells in regenerative medicine // edited by Murugan Ramalingam, Seeram Ramakrishna, Serena Best
Pubbl/distr/stampa	Boca Raton, Fla. : , : CRC Press, , 2012
ISBN	0-429-06665-1 1-4398-7926-5
Descrizione fisica	1 online resource (553 p.)
Collana	BASEES/Routledge Series on Russian and East European Studies
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Disciplina	610.28
Soggetti	Biomedical materials Stem cells - Therapeutic use Regenerative medicine - Materials Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Contents; Preface; Editors; Contributors; Chapter 1 - Identification and Application of Polymers as Biomaterials for Tissue Engineering and Regenerative Medicine; Chapter 2 - Hydrogel as Stem Cell Niche for In Vivo Applications in Regenerative Medicine; Chapter 3 - Fabrication and Application of Gradient Hydrogels in Cell and Tissue Engineering; Chapter 4 - Smart Biomaterial Scaffold for In Situ Tissue Regeneration; Chapter 5 - Fabrication of 3D Scaffolds and Organ Printing for Tissue Regeneration Chapter 6 - Natural Membranes as Scaffold for Biocompatible Aortic Valve Leaflets: Perspectives from PericardiumChapter 7 - Spatially Designed Nanofibrous Membranes for Periodontal Tissue Regeneration; Chapter 8 - Autoinductive Scaffolds for Osteogenic Differentiation of Mesenchymal Stem Cells; Chapter 9 - Ophthalmic Applications of Biomaterials in Regenerative Medicine; Chapter 10 - Calcium Phosphates as Scaffolds for Mesenchymal Stem Cells; Chapter 11 - Bioactive Glasses as Composite Components: Technological Advantages and Bone Tissue Engineering Applications

Chapter 12 - Processing Metallic Biomaterials for a Better Cell Response; Chapter 13 - Osteogenic Adult Stem Cells and Titanium Constructs for Repair and Regeneration; Chapter 14 - Stem Cell Response to Biomaterial Topography; Chapter 15 - Growth Factors, Stem Cells, Scaffolds and Biomaterials for Tendon Regeneration; Chapter 16 - Biomaterials and Stem Cells for Myocardial Repair; Chapter 17 - Perinatal Stem Cells in Regenerative Medicine; Chapter 18 - Adult Stem Cell Survival Strategies; Chapter 19 - Immunobiology of Biomaterial/ Mesenchymal Stem Cell Interactions; Chapter 20 - Autologous Mesenchymal Stem Cells for Tissue Engineering in Urology; Chapter 21 - Umbilical Cord Matrix Mesenchymal Stem Cells: A Potential Allogenic Cell Source for Tissue Engineering and Regenerative Medicine; Chapter 22 - Human Embryonic Stem Cells and Tissue Regeneration; Chapter 24 - Clinical Aspects of the Use of Stem Cells and Biomaterials for Bone Repair and Regeneration; Chapter 25 - Clinical Translation of Tissue Engineering and Regenerative Medicine Technologies; Back Cover

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Sommario/riassunto

This book bridges the gap in experimental approaches and understanding among the key areas of biomedical research. It provides all-important aspects dealing with the basic science involved in structure and properties, techniques and technological innovations in processing and characterizations, and applications of biomaterials and stem cells in tissue regeneration. The coverage ranges from fundamental principles to current technological advancements in the major field of regenerative medicine at the macro/micro/nano/molecular scales. It includes breakthroughs in biomaterials, stem cells, tissue engineering, and drug delivery and the current perspectives of these key elements in the context of regenerative medicine--

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