

1. Record Nr.	UNINA9910453586003321
Titolo	Regenerative medicine applications in organ transplantation // edited by Giuseppe Orlando [and three others]
Pubbl/distr/stampa	London : , : Elsevier Science, , 2014
ISBN	0-12-398520-X
Descrizione fisica	1 online resource (1050 p.)
Altri autori (Persone)	OrlandoGiuseppe
Disciplina	617.954
Soggetti	Regenerative medicine Tissue engineering Transplantation of organs, tissues, etc Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Front Cover; Regenerative Medicine Applications in Organ Transplantation; Copyright Page; Dedication; Contents; Meet the Editors; List of Contributors; Preface; 1 Introduction: Regenerative Medicine and Solid Organ Transplantation from a Historical Perspective; 1.1 Introduction; 1.2 Major Advances in Organ Transplantation; 1.2.1 Vascular Reconstruction; 1.2.2 Organ Preservation; 1.2.3 Artificial Support; 1.2.4 Immunosuppression; 1.2.5 Operational Tolerance; 1.2.6 Organ Recovery and Definition of Brain Death; 1.2.7 Living Donation; 1.2.8 HLA Typing and Crossmatch; 1.3 Regenerative Medicine 1.3.1 A New Term in Transplantation: Regenerative Medicine 1.3.2 Characteristics of Regenerative Tissues; 1.3.3 Polymer Development; 1.3.4 Early Tissue Development; 1.3.5 Cell Source; 1.3.6 Soft Tissue Regeneration as Applied to Battlefield Medicine; 1.3.7 Planar Acellular Dermal Matrices; 1.3.8 Vascularization of Tissue-Engineered Organs; 1.3.9 Perfusion Decellularization, Using Nature's Vascular Network; 1.3.10 Specific Organ Transplantation History and Link to Engineering; 1.3.10.1 Liver; 1.3.10.2 Kidney; 1.3.10.3 Heart; 1.3.10.4 Lung; 1.3.10.5 Pancreas; 1.3.10.6 Intestine 1.3.11 Concluding RemarksReferences; 2 Solid Organ Transplantation: Has the Promise Been Kept and the Needs Met?; 2.1 Introduction; 2.2 Tolerance in organ transplantation; 2.2.1 Tolerogenic Approaches;

2.2.1.1 T-Cell Depletion; 2.2.1.2 Costimulation Blockade; 2.2.1.3 B-Cell Therapies; 2.2.1.4 Chimerism; 2.2.1.5 Regulatory T Cells; 2.2.1.6 Maintenance IS; 2.2.2 Spontaneous Operational Tolerance; 2.2.3 Biomarkers of Operationally Tolerant Transplant Recipients; 2.3 Organ shortage; 2.3.1 Strategies to Increase the Donor Pool; 2.3.1.1 Increasing the Donation Rates
2.3.1.2 Greater Use of Deceased Potential Donors
2.3.1.3 Splitting Livers; 2.3.1.4 Living Donation; 2.3.1.5 Improved Use of Organs; 2.3.1.6 Xenotransplantation; 2.4 Conclusions; Abbreviations; References; I: Principles of Regenerative Medicine and Cell, Tissue, and Organ Bioengineering; 3 Strategies for the Specification of Tissue Engineering Biomaterials; 3.1 Introduction: the Engineering Approach to Tissue Regeneration; 3.2 Principles of Biomaterials Selection in Tissue Engineering; 3.2.1 The Concept of Tissue Engineering Templates; 3.2.2 The Objectives of Tissue Engineering Templates
3.2.3 Classification of Tissue Engineering Templates
3.2.4 Specifications for Template Materials; 3.2.4.1 Mandatory Specifications; 3.2.4.2 Optional/Application-Specific Requirements; 3.3 Specific Types of Template Material; 3.3.1 Porous Solids; 3.3.2 Hydrogels; 3.3.3 ECM-Derived Materials; 3.4 Concluding Comments; Author's Note; References; 4 Principles of Stem Cell Biology; 4.1 The Origin of the Cell Reprogramming; 4.2 Somatic Cell Nuclear Transfer; 4.2.1 SCNT in Amphibians; 4.2.2 SCNT in Mammals; 4.3 Cell Fusion; 4.3.1 The Transcription Factors Induce Cell Lineage Switch
4.4 Transcription Factor Transduction: iPS Cell Generation

Sommario/riassunto

Regenerative Medicine Applications in Organ Transplantation illustrates exactly how these two fields are coming together and can benefit one another. It discusses technologies being developed, methods being implemented, and which of these are the most promising. The text encompasses tissue engineering, biomaterial sciences, stem cell biology, and developmental biology, all from a transplant perspective. Organ systems considered include liver, renal, intestinal, pancreatic, and more. Leaders from both fields have contributed chapters, clearly illustrating that regenerative medicine an
