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Descrizione fisica	1 online resource (86 illus., 81 illus. in color. eReference.)
Collana	Tissue Engineering and Regeneration
Disciplina	612.028 571.538
Soggetti	Regenerative medicine Tissue engineering Biomedical engineering Biomaterials Biophysics Biological physics Regenerative Medicine/Tissue Engineering Biomedical Engineering and Bioengineering Biological and Medical Physics, Biophysics Enginyeria biomèdica Medicina regenerativa Citologia Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di contenuto	From the Contents: Sources -- Primary cells -- Chondrocytes -- Muscle cells -- ß-cells -- Schwann cells -- Cell lines for test systems -- Immortalized primary cells -- STEM -- Bone marrow derived -- Placenta derived cells -- Amnion -- in toto -- Placenta / Chorion -- Cord/Wharton cells -- Amniotic fluid cells.
Sommario/riassunto	This reference work presents the origins of cells for tissue engineering and regeneration, including primary cells, tissue-specific stem cells, pluripotent stem cells and trans-differentiated or reprogrammed cells.

There is particular emphasis on current understanding of tissue regeneration based on embryology and evolution studies, including mechanisms of amphibian regeneration. The book covers the use of autologous versus allogeneic cell sources, as well as various procedures used for cell isolation and cell pre-conditioning , such as cell sorting, biochemical and biophysical pre-conditioning, transfection and aggregation. It also presents cell modulation using growth factors, molecular factors, epigenetic approaches, changes in biophysical environment, cellular co-culture and other elements of the cellular microenvironment. The pathways of cell delivery are discussed with respect to specific clinical situations, including delivery of ex vivo manipulated cells via local and systemic routes, as well as activation and migration of endogenous reservoirs of reparative cells. The volume concludes with an in-depth discussion of the tracking of cells in vivo and their various regenerative activities inside the body, including differentiation, new tissue formation and actions on other cells by direct cell-to-cell communication and by secretion of biomolecules.