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Benjamin S. Harrison; 7. Bioreactor technologies for tissue engineering a replacement heart valve / Stefanie Biechler, Michael J. Yost, Richard L. Goodwin and Jay D. Potts; 8. Incorporation of active factors (pharmacological substances) in biomaterials for tissue engineering / Roche de Guzman and Mark Van Dyke; 9. Enabling drug discovery technologies for regenerative pharmacology / G. Sitta Sittampalam; 10. Animal models of regenerative medicine / J. Koudy Williams, James Yoo and Anthony Atala; Part III. Future Applications of Regenerative Pharmacology: 11. Gap junction mediated therapies to eliminate cardiac arrhythmias / Peter R. Brink, Virginijus Valiunas, and Ira S. Cohen; 12. Regenerative cardiac pharmacology: translating stem cell biology into therapeutic solutions / Atta Behfar and Andre Terzic; 13. Wound healing and cell therapy for muscle repair / J.B. Vella and J. Huard; 14. Regenerative pharmacology of implanted materials and tissue engineered constructs / Emily Ongstad, Michael J. Yost, Richard L. Goodwin, Harold I. Friedman, Stephen A. Fann, Gautam S. Chatnekar and Robert G. Gourdie; 15. The past, present, and future of tissue regeneration / M. Natalia Vergara and Panagiotis A. Tsonis.

Sommario/riassunto

Regenerative medicine is broadly defined as the repair or replacement of damaged cells, tissues and organs. It is a multidisciplinary effort in which technologies derive from the fields of cell, developmental and molecular biology; chemical and material sciences (i.e. nanotechnology); engineering; surgery; transplantation; immunology; molecular genetics; physiology; and pharmacology. As regenerative medicine technologies continue to evolve and expand across the boundaries of numerous scientific disciplines, they remain at the forefront of the translational research frontier with the potential to radically alter the treatment of a wide variety of disease and dysfunction. This book will draw attention to the critical role that pharmacological sciences will undeniably play in the advancement of these treatments. This book is invaluable for advanced students, postdoctoral fellows, researchers new to the field of regenerative medicine/tissue engineering, and experienced investigators looking for new research avenues. The first state-of-the-art book in this rapidly evolving field of research.
