

Contents

Part I Wound Repair and Regeneration

Mechanisms of Vessel Regression: Toward an Understanding of the Resolution of Angiogenesis	3
Mateusz S. Wietecha, Wendy L. Cerny and Luisa A. DiPietro	
Wound Healing in Mammals and Amphibians: Toward Limb Regeneration in Mammals	33
Aiko Kawasumi, Natsume Sagawa, Shinichi Hayashi, Hitoshi Yokoyama and Koji Tamura	

Part II Limb and Lens Regeneration

Cellular Plasticity During Vertebrate Appendage Regeneration	53
James R. Monaghan and Malcolm Maden	
Cell Signaling Pathways in Vertebrate Lens Regeneration	75
Jonathan J. Henry, Alvin G. Thomas, Paul W. Hamilton, Lisa Moore and Kimberly J. Perry	

Part III Musculoskeletal Repair and Regeneration

Regenerative Medicine: Challenges and Perspectives for Successful Therapies	101
S. Viswanathan and C. Joshi	

Employing the Biology of Successful Fracture Repair to Heal Critical Size Bone Defects	113
Jo Ann Cameron, Derek J. Milner, Jung Seok Lee, Jianjun Cheng, Nicholas X. Fang and Iwona M. Jasiuk	
Muscle Repair and Regeneration: Stem Cells, Scaffolds, and the Contributions of Skeletal Muscle to Amphibian Limb Regeneration	133
Derek J. Milner and Jo Ann Cameron	
 Part IV Neural Regeneration	
Neural Regeneration	163
Melissa M. Steward, Akshayalakshmi Sridhar and Jason S. Meyer	
Teleost Fish as a Model System to Study Successful Regeneration of the Central Nervous System.	193
Günther K. H. Zupanc and Ruxandra F. Sîrbulescu	
 Part V Epigenetics and Cell Cycle in Regeneration	
Epigenetics and Regeneration	237
Nobuyasu Maki and Hironobu Kimura	
Cell Cycle Regulation and Regeneration.	253
Ellen Heber-Katz, Yong Zhang, Khamila Bedelbaeva, Fengyu Song, Xiaoping Chen and David L. Stocum	
Index	277