

Contents

1 Potential Clinical Applications of Stem Cells in Regenerative Medicine	1
Suman Suman, Alison Domingues, Janina Ratajczak, and Mariusz Z. Ratajczak	
2 Genomic Instability of iPSCs and Challenges in Their Clinical Applications	23
Masahito Yoshihara, Akiko Oguchi, and Yasuhiro Murakawa	
3 Hematopoietic Stem and Progenitor Cells (HSPCs)	49
Kamila Bujko, Magda Kucia, Janina Ratajczak, and Mariusz Z. Ratajczak	
4 Neural Stem Cells	79
Julian P. Tuazon, Vanessa Castelli, Jea-Young Lee, Giovambattista B. Desideri, Liborio Stuppia, Anna Maria Cimini, and Cesar V. Borlongan	
5 Therapeutic Potential of Mesenchymal Stem Cells in Immune-Mediated Diseases	93
Adam Eljarrah, Marina Gergues, Piotr W. Pobiarzyn, Oleta A. Sandiford, and Pranela Rameshwar	
6 Stem Cells in the Mammalian Gonads	109
Deepa Bhartiya, Sandhya Anand, Ankita Kaushik, and Diksha Sharma	
7 Stem and Progenitor Cells in the Pathogenesis and Treatment of Digestive Diseases	125
Wojciech Marlicz, Igor Łoniewski, and Karolina Skonieczna-Żydecka	

8 Stem Cells in Psychiatry	159
Jolanta Kucharska-Mazur, Mariusz Z. Ratajczak, and Jerzy Samochowiec	
9 The Role of Extracellular Vesicles as Paracrine Effectors in Stem Cell-Based Therapies	175
Stefania Bruno, Sharad Kholia, Maria Chiara Deregibus, and Giovanni Camussi	
10 Cellular Therapy for Ischemic Heart Disease: An Update	195
Hsuan Peng and Ahmed Abdel-Latif	
11 Vasculogenic Stem and Progenitor Cells in Human: Future Cell Therapy Product or Liquid Biopsy for Vascular Disease	215
David M. Smadja	
12 Epidermal Stem Cells	239
Anna M. Lenkiewicz	
13 Stem Cells in Lungs	261
Andrzej Ciechanowicz	
14 Targeting Purinergic Signaling and Cell Therapy in Cardiovascular and Neurodegenerative Diseases	275
Roberta Andrejew, Talita Glaser, Agatha Oliveira-Giacomelli, Deidiane Ribeiro, Mariana Godoy, Alessandro Granato, and Henning Ulrich	
15 Plausible Links Between Metabolic Networks, Stem Cells, and Longevity	355
Magdalena Kucia and Mariusz Z. Ratajczak	
Index	389