

# Contents

<b>1 Role of Mesenchymal Stem Cells, Macrophages, and Biomaterials During Myocardial Repair .....</b>	<b>1</b>
Isabella Pallotta, Emily A. Wrona, Bruce Sun and Donald O. Freytes	
<b>2 The Role of Macrophages in the Foreign Body Response to Implanted Biomaterials .....</b>	<b>17</b>
Tony Yu, Valerie J. Tutwiler and Kara Spiller	
<b>3 Integrating Tissue Microenvironment with Scaffold Design to Promote Immune-Mediated Regeneration .....</b>	<b>35</b>
Kaitlyn Sadtler, Franck Housseau, Drew Pardoll and Jennifer H. Elisseeff	
<b>4 Advances in Molecular Design of Polymer Surfaces with Antimicrobial, Anticoagulant, and Antifouling Properties .....</b>	<b>53</b>
Marek W. Urban	
<b>5 Layer-by-Layer Coatings as Infection-Resistant Biomaterials .....</b>	<b>81</b>
Svetlana A Sukhishvili	
<b>6 Nature-Inspired Multifunctional Host Defense Peptides with Dual Antimicrobial-Immunomodulatory Activities .....</b>	<b>95</b>
Jasmeet Singh Khara and Pui Lai Rachel Ee	
<b>7 Biomaterials-Based Strategies in Blood Substitutes .....</b>	<b>113</b>
Anirban Sen Gupta	
<b>8 Biomaterials-Based Immunomodulation of Dendritic Cells .....</b>	<b>139</b>
Evelyn Bracho-Sanchez, Jamal S. Lewis and Benjamin G. Keselowsky	
<b>9 Nanosystems for Immunotherapeutic Drug Delivery .....</b>	<b>157</b>
Alex Schudel, Michael C. Bellavia and Susan N. Thomas	

<b>10 Biomaterial-Based Modulation of Cancer</b> .....	171
Fnu Apoorva and Ankur Singh	
<b>11 Targeting Liposomes to Immune Cells</b> .....	193
Matthew Levy and Deborah Palliser	
<b>12 Integrated Biomaterial Composites for Accelerated Wound Healing</b> .....	209
Viness Pillay, Pradeep Kumar and Yahya E. Choonara	
<b>13 Adverse Effects of By-products from Polymers Used for Joint Replacement</b> .....	225
Tzu-Hua Lin, Jukka Pajarinen, Florence Loi, Taishi Sato, Changchun Fan, Zhenyu Yao and Stuart Goodman	
<b>14 Artificial Antigen-Presenting Cells: Biomimetic Strategies for Directing the Immune Response</b> .....	257
Randall A. Meyer and Jordan J. Green	
<b>Index</b> .....	279

Biomaterials in Regenerative Medicine and the Immune System

Santambrogio, L. (Ed.)

2015, IX, 280 p. 82 illus., 59 illus. in color., Hardcover

ISBN: 978-3-319-18044-1