

# Contents

## Part I Mechanisms of Uptake and Targeting

<b>Mass Transport via Cellular Barriers and Endocytosis .....</b>	<b>3</b>
Silvia Ferrati, Agathe K. Streiff, Srimeenakshi Srinivasan, Jenolyn F. Alexander, Nikhil Bhargava, Andrew M. Peters, Nelly E. Song, Ennio Tasciotti, Biana Godin, Mauro Ferrari, and Rita E. Serda	
<b>Approaches to Achieving Sub-cellular Targeting of Bioactives Using Pharmaceutical Nanocarriers .....</b>	<b>57</b>
Melani Solomon and Gerard G.M. D'Souza	
<b>Delivery to Intracellular Targets by Nanosized Particles .....</b>	<b>73</b>
Gillian Barratt	
<b>The Potential and Current Progress of Internalizing Molecules in Targeted Drug Delivery .....</b>	<b>97</b>
Jiehua Zhou and John J. Rossi	
<b>Simulation Based Analysis of Nanocarrier Internalization: Exciting Challenges with a New Computational Tool.....</b>	<b>125</b>
Béla Csukás, Mónika Varga, Aleš Prokop, and Sándor Balogh	
<b>Nanosized Drug Delivery Vectors and the Reticuloendothelial System .....</b>	<b>155</b>
Lisa M. Kaminskas and Ben J. Boyd	
<b>Membrane Crossover by Cell-Penetrating Peptides: Kinetics and Mechanisms – From Model to Cell Membrane Perturbation by Permeant Peptides .....</b>	<b>179</b>
Isabel D. Alves, Nicolas Rodriguez, Sophie Cribier, and Sandrine Sagan	

## **Part II Nanocarrier Formulation**

<b>Intracellular Delivery: A Multifunctional and Modular Approach.....</b>	<b>199</b>
Rupa R. Sawant and Vladimir P. Torchilin	
<b>Poly(Alkyl Cyanoacrylate) Nanosystems .....</b>	<b>225</b>
Julien Nicolas and Christine Vauthier	
<b>Amphiphilic Block Copolymer Based Nanocarriers for Drug and Gene Delivery .....</b>	<b>251</b>
Xiao-Bing Xiong and Afsaneh Lavasanifar	
<b>Stimuli-Responsive Polymersomes .....</b>	<b>291</b>
Min-Hui Li	
<b>Silica-Based Nanoparticles for Intracellular Drug Delivery .....</b>	<b>333</b>
Sandrine Quignard, Sylvie Masse, and Thibaud Coradin	
<b>Magnetic Nanoparticles for Biomedicine.....</b>	<b>363</b>
Ivo Šafařík, Kateřina Horská, and Mirka Šafaříková	
<b>Biosynthesis of Metallic Nanoparticles and Their Applications .....</b>	<b>373</b>
Adam Schröfel and Gabriela Kratošová	
<b>Nanocrystals: Production, Cellular Drug Delivery, Current and Future Products .....</b>	<b>411</b>
Rainer H. Müller, Ranjita Shegokar, Sven Gohla, and Cornelia M. Keck	
<b>Processing and Scale-up of Polymeric Nanoparticles.....</b>	<b>433</b>
Christine Vauthier and Kawthar Bouchemal	

## **Part III Medical Applications**

<b>Magnetic Resonance Tracking of Stem Cells with Iron Oxide Particles .....</b>	<b>459</b>
Eddy S.M. Lee, Brian K. Rutt, Nicholas M. Fisk, Shih-Chang Wang, and Jerry Chan	
<b>Nanoparticles for the Oral Administration of Cancer Therapies .....</b>	<b>487</b>
Socorro Espuelas, Maite Agüeros, Irene Esparza, and Juan M. Irache	
<b>Nanoparticles for Photodynamic Therapy Applications.....</b>	<b>511</b>
Régis Vanderesse, Céline Frochot, Muriel Barberi-Heyob, Sébastien Richeter, Laurence Raehm, and Jean-Olivier Durand	

<b>Nanoparticles Enhanced Hyperthermia .....</b>	<b>567</b>
Qian Wang and Jing Liu	
<b>Non-viral Gene Therapy.....</b>	<b>599</b>
Jianxiang Zhang, Xiaohui Li, Liping Lou, Xiaodong Li, Yi Jia, Zhe Jin, and Yuxuan Zhu	
<b>Imaging of Nanoparticle Delivery Using Terahertz Waves.....</b>	<b>701</b>
Joo-Hiuk Son, Seung Jae Oh, Jihye Choi, Jin-Suck Suh, Yong-Min Huh, and Seungjoo Haam	
<b>Calcium Phosphate and Calcium Phosphosilicate Mediated Drug Delivery and Imaging.....</b>	<b>713</b>
O.A. Pinto, A. Tabaković, T.M. Goff, Y. Liu, and J.H. Adair	
<b>Intracellular Bacteria and Protozoa.....</b>	<b>745</b>
Maria Jose Morilla and Eder Lilia Romero	
<b>Gene Therapy in Bone Regeneration: A Summary of Delivery Approaches for Effective Therapies .....</b>	<b>813</b>
Laura Rose, Ross Fitzsimmons, Tarek El-Bialy, and Hasan Uludağ	
<b>Nanoinformatics: Developing Advanced Informatics Applications for Nanomedicine .....</b>	<b>847</b>
Victor Maojo, Miguel García-Remesal, Diana de la Iglesia, José Crespo, David Pérez-Rey, Stefano Chiesa, Martin Fritts, and Casimir A. Kulikowski	
<b>Index.....</b>	<b>861</b>

Intracellular Delivery

Fundamentals and Applications

Prokop, A. (Ed.)

2011, XIX, 867 p. 281 illus., 95 illus. in color., Hardcover

ISBN: 978-94-007-1247-8