

Contents

<i>Contributors</i>	vii
1. Molecular platforms for targeted drug delivery	1
Katia Maso, Antonella Grigoletto, Maria J. Vicent, and Gianfranco Pasut	
1. Introduction	2
2. Polymer conjugates	6
3. Unsaturated fatty acids conjugates	21
4. Liposomes	24
5. Antibody drug conjugates	28
6. Conclusions	35
Acknowledgments	36
References	36
2. Nongenomic glucocorticoid effects and their mechanisms of action in vertebrates	51
William M. Johnstone III, Jamie L. Honeycutt, Courtney A. Deck, and Russell J. Borski	
1. Introduction	52
2. Genomic mechanism of glucocorticoid action	54
3. Criteria for nongenomic actions of steroids	57
4. Nongenomic actions of glucocorticoids	59
5. Nongenomic mechanism of glucocorticoid action	74
6. Conclusions	86
Acknowledgments	87
References	87
Further reading	96
3. A tale of the good and bad: Cell senescence in bone homeostasis and disease	97
Xiaonan Liu and Mei Wan	
1. Current understanding of cellular senescence and SASP	98
2. Normal programmed senescence during embryonic bone development and childhood bone homeostasis	105
3. Cellular senescence in osteoporosis	111

4. Summary and perspective	114
Acknowledgments	115
References	116
4. New insights into the regulation of the actin cytoskeleton dynamics by GPCR/β-arrestin in cancer invasion and metastasis	129
Laura Rosanò and Anna Bagnato	
1. Introduction	130
2. Evolving roles of β -arrestin in GPCR regulation	131
3. β -Arrestin-dependent signaling in cancer	133
4. β -arrestins in GPCR-driven tumor cell migration and invasiveness	138
5. c-Src/EGFR	138
6. Cofilin	140
7. Filamin-A	141
8. Small GTPases	142
9. hMEN1 and other members of WASP family	142
10. IQGAP1	144
11. Targeting the GPCR/ β -arrestin system in cancer	145
12. Conclusions	146
Competing Interests	146
Funding	146
Acknowledgments	146
References	147
5. Healthy skeletal muscle aging: The role of satellite cells, somatic mutations and exercise	157
Irene Franco, Rodrigo Fernandez-Gonzalo, Peter Vrtačnik, Tommy R. Lundberg, Maria Eriksson, and Thomas Gustafsson	
1. Introduction	158
2. Characterization and function of the satellite cells	160
3. Effects: How the age-related decline in the satellite cell pool affects the skeletal muscle	167
4. Causes: Why satellite cell number and function decline with increasing age	172
5. Exercise: An intervention to modulate satellite cell deterioration with aging	181
6. Conclusions	186
Acknowledgments	186
References	187