

Contents

DNA Methylation and Cancer	1
Phillippa C. Taberlay and Peter A. Jones	
Genome-Wide Epigenetic Modifications in Cancer	25
Yoon Jung Park, Rainer Claus, Dieter Weichenhan, and Christoph Plass	
DNA Repair and the Control of DNA Methylation	51
Primo Schär and Olivier Fritsch	
Errors in Erasure: Links Between Histone Lysine Methylation Removal and Disease	69
Elizabeth M. Duncan and C. David Allis	
Histone Modifications in Cancer Biology and Prognosis	91
Siavash K. Kurdistani	
Dynamics of Histone Lysine Methylation: Structures of Methyl Writers and Erasers	107
Anup K. Upadhyay and Xiaodong Cheng	
Epigenetic Mechanisms of Mental Retardation	125
Anne Schaefer, Alexander Tarakhovsky, and Paul Greengard	
Histone and DNA Modifications in Mental Retardation	147
Shigeki Iwase and Yang Shi	
HDAC Inhibitors and Cancer Therapy	175
Peter W. Atadja	

Epigenetic Mechanisms in Acute Myeloid Leukemia	197
Antoine H.F.M. Peters and Juerg Schwaller	
The Liver-Specific MicroRNA miR-122: Biology and Therapeutic Potential	221
Witold Filipowicz and Helge Großhans	
Transcriptional Regulatory Networks in Embryonic Stem Cells	239
Yun Shen Chan, Lin Yang, and Huck-Hui Ng	
Small Molecules in Cellular Reprogramming and Differentiation	253
Xu Yuan, Wenlin Li, and Sheng Ding	
Index	267