

Contents

1	The Epigenetic Regulatory Machinery	1
	Constanze Bonifer and Peter N. Cockerill	
Part I Nonmammalian Hematopoiesis		
2	What Can We Learn from Flies: Epigenetic Mechanisms Regulating Blood Cell Development in <i>Drosophila</i>	15
	Paul Badenhorst	
3	Epigenetic and Transcriptional Mechanisms Regulating Blood Cell Development in Zebrafish	49
	Xiaoying Bai	
Part II Epigenetic Mechanisms Regulating Mammalian Hematopoietic Stem Cell Development and Function		
4	Epigenetic and Transcriptional Mechanisms Regulating the Development of the Haematopoietic System in Mammals	67
	Maud Fleury, Flor M. Perez-Campo, Guilherme Costa, Georges Lacaud, and Valerie Kouskoff	
5	Polycomb Complexes: Chromatin Regulators Required for Cell Diversity and Tissue Homeostasis	95
	Miguel Vidal	
6	The Role of Polycomb Group Proteins in Hematopoietic Stem Cell (HSC) Self-Renewal and Leukemogenesis	141
	Vincent van den Boom, Hein Schepers, Annet Z. Brouwers-Vos, and Jan Jacob Schuringa	
7	Role of the Trithorax (MLL): HOX Axis in HSC Development, Function, and Leukemia	175
	Robert K. Slany	

8	Role of DNA Methyltransferases and DNA Methylation in Cell Fate Decisions During Blood Cell Development and Leukemia	205
	Grant A. Challen and Jennifer J. Trowbridge	
Part III Epigenetic and Transcriptional Mechanisms Regulating Cell Fate Decisions and Blood Cell Lineage Development		
9	Transcriptional and Epigenetic Regulation in the Development of Myeloid Cells: Normal and Diseased Myelopoiesis	223
	Peter Laslo and Tomas Stopka	
10	The Molecular Basis of Normal Erythroid/Megakaryocyte Development and Mechanisms of Epigenetic/Transcriptional Deregulation Leading to Erythroleukemia and Thalassemia	247
	Douglas Vernimmen	
11	The Molecular Basis of T Cell Development and How Epigenetic/Transcriptional Deregulation Leads to T-ALL	267
	Will Bailis and Warren S. Pear	
12	Epigenetic Control of T-Cell Receptor Locus Rearrangements in Normal and Aberrant Conditions	295
	Beatriz del Blanco, Úrsula Angulo, and Cristina Hernández-Munain	
13	The Molecular Basis of B Cell Development and the Role of Deregulated Transcription and Epigenetics in Leukaemia and Lymphoma	331
	Christopher M. Kirkham, James N. Scott, Joan Boyes, and Sarah Bevington	
Part IV Epigenetic Control of Immune Cell Function		
14	Epigenetic Control of Immune T Cell Memory	367
	Atsushi Onodera, Damon J. Tumes, and Toshinori Nakayama	
15	The Macrophage Epigenome and the Control of Inflammatory Gene Expression	383
	Sara Polletti, Alessia Curina, Gioacchino Natoli, and Serena Ghisletti	
	Glossary	399
	Index	413