
Contents

Preface, vii

Contributors, ix

CHAPTER 1 ■ A Short Introduction to DNA Methylation	1
JÖRG TOST	
CHAPTER 2 ■ Epigenetic Modifications of Histones	17
GEORGE RASTI AND ALEJANDRO VAQUERO	
CHAPTER 3 ■ Epigenetic Reprogramming in Early Embryo Development	29
SEBASTIAN CANOVAS AND PILAR COY	
CHAPTER 4 ■ Epigenetic Reprogramming of Mammalian Primordial Germ Cells	51
SEBASTIAN CANOVAS AND SUSANA M. CHUVA DE SOUSA LOPES	
CHAPTER 5 ■ Laboratory Molecular Methodologies to Analyze DNA Methylation	69
DAVID MONK AND GAVIN KELSEY	
CHAPTER 6 ■ Intrinsic and Extrinsic Factors That Influence Epigenetics	99
IVAN NALVARTE, JOËLLE RÜEGG, AND CARLOS GUERRERO-BOSAGNA	
CHAPTER 7 ■ Epigenetic and Assisted Reproduction Epidemiological Studies	115
THOMAS EGGERMANN	

CHAPTER 8 ■ Epigenetics and Assisted Reproduction Experimental Studies: Sperm Epigenome	131
JOAN BLANCO AND CRISTINA CAMPRUBÍ	
CHAPTER 9 ■ Epigenetic and Assisted Reproduction Experimental Studies: Sperm ncRNAs	143
CELIA CORRAL-VAZQUEZ AND ESTER ANTON	
CHAPTER 10 ■ Epigenetic and Assisted Reproduction Experimental Studies: Ovarian Stimulation	157
PATRICIA FALQUE	
CHAPTER 11 ■ Epigenetic and Assisted Reproduction Experimental Studies: <i>In Vitro</i> Culture	169
SERAFÍN PÉREZ-CEREZALES, NOELIA FONSECA BALVÍS, BENJAMÍN PLANELLS, ISABEL GÓMEZ-REDONDO, ERIC MARQUÉS-GARCÍA, RICARDO LAGUNA-BARRAZA, EVA PERICUESTA, RAUL FERNÁNDEZ-GONZÁLEZ, AND ALFONSO GUTIÉRREZ-ADÁN	
CHAPTER 12 ■ Epigenetics: Hope against Genetic Determinism	183
JOSEP SANTALÓ	
CHAPTER 13 ■ Future Perspectives	189
JOAN BLANCO, CRISTINA CAMPRUBÍ, AND DAVID MONK	