
Contents

Part I Basic Concepts and Background

- 1 History of Clinical Cytogenetics** 3
Steven L. Gersen
- 2 DNA, Chromosomes, and Cell Division** 9
Martha B. Keagle
- 3 Human Chromosome Nomenclature: An Overview
and Definition of Terms** 23
Marilyn L. Slovak, Aaron Theisen, and Lisa G. Shaffer

Part II Examining and Analyzing Chromosomes

- 4 Basic Cytogenetics Laboratory Procedures**..... 53
Martha B. Keagle and Steven L. Gersen
- 5 The Essentials of Light Microscopy** 67
Nathan S. Claxton and Stephen T. Ross
- 6 Quality Control and Quality Assurance** 77
Martha B. Keagle
- 7 Instrumentation in the Cytogenetics Laboratory** 95
Steven L. Gersen

Part III Clinical Cytogenetics

- 8 Autosomal Aneuploidy**..... 113
Jin-Chen C. Wang
- 9 Structural Chromosome Rearrangements**..... 139
Kathleen Kaiser-Rogers and Kathleen W. Rao
- 10 Sex Chromosomes, Sex Chromosome Disorders, and Disorders
of Sex Development**..... 175
Cynthia M. Powell
- 11 The Cytogenetics of Infertility** 213
Linda Marie Randolph
- 12 Prenatal Cytogenetics** 229
Linda Marie Randolph
- 13 The Cytogenetics of Spontaneous Abortion** 275
Solveig M.V. Pflueger

14 Chromosome Instability	293
Xiao-Xiang Zhang	
Part IV Cancer Cytogenetics	
15 The Cytogenetics of Hematologic Neoplasms.....	309
Aurelia Meloni-Ehrig	
16 The Cytogenetics of Solid Tumors.....	371
Linda D. Cooley and Kathleen S. Wilson	
Part V Adjunct Technologies	
17 Fluorescence <i>In Situ</i> Hybridization (FISH).....	415
Daynna J. Wolff	
18 Microarray-Based Cytogenetics	441
Lisa G. Shaffer	
Part VI Beyond Chromosomes	
19 Fragile X—A Family of Disorders: Changing Phenotype and Molecular Genetics.....	453
Elaine B. Spector	
20 Genomic Imprinting and Uniparental Disomy	473
Jin-Chen C. Wang	
21 Genetic Counseling	499
Sarah Hutchings Clark	
Index.....	515

The Principles of Clinical Cytogenetics

Gersen, S.L.; Keagle, M.B. (Eds.)

2013, X, 569 p., Hardcover

ISBN: 978-1-4419-1687-7