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| Soggetti | Cell cycle<br>Cell physiology<br>Human genetics<br>Cell Cycle Analysis<br>Cell Physiology<br>Human Genetics |
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| Nota di bibliografia | Includes bibliographical references at the end of each chapters. |
| Nota di contenuto | Preface -- Use of Mass Spectrometry to Study the Centromere and Kinetochore -- Critical Foundation of the Kinetochore: the Constitutive Centromere Associated Network (CCAN) -- The Power of Xenopus Egg Extract for Reconstitution of Centromere and Kinetochore Function -- Centrochromatin of Fungi -- Evolutionary Lessons from Species with Unique Kinetochores.-Quantitative Microscopy Reveals Centromeric Chromatin Stability, Size, and Cell Cycle Mechanisms to Maintain Centromere Homeostasis -- Orchestrating the Specific Assembly of Centromeric Nucleosomes -- Artificial Chromosomes and Strategies to Initiate Epigenetic Centromere Establishment -- Post-translational Modifications of Centromeric Chromatin -- Centromere Silencing Mechanisms -- Centromere Transcription: Means and Motive -- The Promises and Challenges of Genomic Studies of Human Centromeres -- DNA Sequences in Centromere Formation and Function -- The Unique |

DNA Sequences Underlying Equine Centromeres -- Centromere Dynamics in Male and Female Germ Cells -- Cell Biology of Cheating—Transmission of Centromeres and Other Selfish Elements Through Asymmetric Meiosis -- Biophysics of Microtubule End Coupling at the Kinetochore -- Molecular Mechanisms of Spindle Assembly Checkpoint Activation and Silencing -- A Kinase-Phosphatase Network That Regulates Kinetochore-Microtubule Attachments and the SAC -- Centromeric Cohesion: Molecular Glue and Much More -- Centromere Structure and Function -- The Role of Centromere Defects in Cancer.

Sommario/riassunto

This book presents the latest advances concerning the regulation of chromosome segregation during cell division by means of centromeres and kinetochores. The authors cover both state-of-the-art techniques and a range of species and model systems, shedding new light on the molecular mechanisms controlling the transmission of genetic material between cell divisions and from parent to offspring. The chapters cover five major areas related to the current study of centromeres and kinetochores: 1) their genetic and epigenetic features, 2) key breakthroughs at the molecular, proteomic, imaging and biochemical level, 3) the constitutive centromere proteins, 4) the role of centromere proteins in the physical process of chromosome segregation and its careful orchestration through elaborate regulation, and 5) intersections with reproductive biology, human health and disease, as well as chromosome evolution. The book offers an informative and provocative guide for newcomers as well as those already acquainted with the field.