1. Record Nr. UNISA996201260503316

Autore	Sumner A. T (Adrian Thomas), <1940->
Titolo	Chromosomes [[electronic resource]] : organization and function / / Adrian T. Sumner
Pubbl/distr/stampa	Oxford ; ; Malden, MA, : Blackwell Pub., 2003
ISBN	1-282-34168-5 9786612341687 0-470-69597-8 0-470-69522-6
Descrizione fisica	1 online resource (300 p.)
Disciplina	572.8 572.87
Soggetti	Chromosomes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. [239]-273) and index.
Nota di contenuto	Chromosomes: Organization and Function; Contents; Preface; Chapter 1: Why study chromosomes?; 1.1 Early studies of chromosomes; 1.2 The origin of genetics, and the chromosome theory of inheritance; 1.3 The chemical nature of genes and chromosomes; 1.4 The position of chromosomes in an age of molecular biology; Website; Chapter 2: Mitosis, meiosis and the cell cycle; 2.1 The necessity for accuracy in the cell cycle; 2.2 The mitotic cycle; 2.3 Essentials of mitosis; 2.4 Other cell-cycle events must be co-ordinated with mitosis; 2.5 Meiosis; 2.6 Accuracy is ensured in cell division Chapter 3: DNA, the genetic code3.1 Stability and variability of DNA; 3.2 The amount of DNA in nuclei, and the C-value paradox; 3.3 Repetitive DNA - sequences with a function, or just junk?; 3.4 DNA replication; 3.5 5-Methylcytosine - epigenetic modification of DNA; 3.6 DNA damage and repair; 3.7 DNA is dynamic; Websites; Chapter 4: Assembly of chromatin; 4.1 Introduction; 4.2 The nucleosome fibre; 4.3 Packing nucleosomes into solenoids; 4.4 Yet more packing; 4.5 Other ways to pack DNA; 4.6 Summary; Websites; Chapter 5: The chromosomes in interphase 5.1 Interphase nuclei: sites of chromosome activity5.2 How are the

chromosomes arranged in the nucleus?; 5.3 Where do replication and transcription take place?; 5.4 The nuclear matrix; 5.5 Other nuclear structures; 5.6 Interphase nuclei are highly organized and dynamic; Website; Chapter 6: Structure of mitotic and meiotic chromosomes; 6.1 Chromosomes of dividing and interphase cells compared; 6.2 Making a mitotic chromosome; 6.3 Loops and scaffolds; 6.4 Chromosome condensation - the final stages; 6.5 Biochemistry of condensation; 6.6 The periphery of the chromosome
6.7 Meiotic and mitotic chromosomes compared6.8 There is still much to be learnt about chromosome structure; Chapter 7: Constitutive heterochromatin; 7.1 What is heterochromatin?; 7.2 Where is constitutive heterochromatin on the chromosomes?; 7.3 What is constitutive heterochromatin made of?; 7.4 What does heterochromatin do?; 7.5 Applications of heterochromatin staining; 7.6 Heterochromatin today; Websites; Chapter 8: Sex chromosomes and sex determination; 8.1 What are sex chromosomes?; 8.2 The evolution of sex chromosomes; 8.3 Sex chromosome systems and mechanisms of sex determination
8.4 Dosage compensation: coping with different numbers of X chromosomes in the two sexes8.5 Sex chromosomes at meiosis and gametogenesis; 8.6 Sex chromosomes: different means, the same ends; Websites; Chapter 9: Imprinting; 9.1 What is imprinting?; 9.2 Which organisms show imprinting?; 9.3 How does imprinting work?; 9.4 What is imprinting for?; Websites; Chapter 10: Euchromatin and the longitudinal differentiation of chromosomes; 10.1 What is euchromatin?; 10.2 Euchromatin and chromosome banding in mammals; 10.3 Longitudinal differentiation of chromosomes in non-mammals
10.4 The how and why of longitudinal differentiation

Sommario/riassunto

Integrating classical knowledge of chromosome organisation with recent molecular and functional findings, this book presents an up-to-date view of chromosome organisation and function for advanced undergraduate students studying genetics. The organisation and behaviour of chromosomes is central to genetics and the equal segregation of genes and chromosomes into daughter cells at cell division is vital. This text aims to provide a clear and straightforward explanation of these complex processes.Following a brief historical introduction, the text covers the topics of cell cycle dynamics and