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Nota di contenuto	Cover; PREFACE; Contents; INTRODUCTION; The genome: a short history of different views; Population genetics and molecular evolution; Three remarks on terminology; A brief chronology of our investigations; Molecular approaches to the study of the genome; LESSONS FROM A SMALL DISPENSABLE GENOME, THE MITOCHONDRIAL GENOME OF YEAST; The mitochondrial genome of yeast and the petite mutation; The ""petite colonie"" mutation; The petite mutation is accompanied by gross alterations of mitochondrial DNA; The AT spacers and the deletion hypothesis; The petite mutation is due to large deletions The GC clustersThe excision sites; Genomes without genes; The origins of replication; Excision and recombination; The canonical and the surrogate origins of replication of petite genomes; The replication of petite genomes and the phenomenon of suppressivity; The ori sequences as transcription initiation sites; The effect of flanking sequences on the efficiency of replication of petite genomes; The on petites 14 and 26; Temperature and the replicative ability of ori petites 14 and 26; The organization and evolution of the mitochondrial genome of yeast

The organization of the mitochondrial genome of yeast  
The evolutionary origin of ori sequences; The evolutionary origin of the GC clusters; The evolutionary origin of the AT spacers and the var 1 gene; The non-coding sequences: evolutionary origin and biological role; THE ORGANIZATION OF THE VERTEBRATE GENOME; Isochores and isochore families; The fractionation of the bovine genome; The fractionation of eukaryotic main-band DNAs; Isochores and isochore families; Isochores and the draft human genome sequence; Other misunderstandings about isochores; Compositional patterns of coding sequences  
Compositional correlations between coding and non-coding sequences  
THE COMPOSITIONAL PATTERNS OF VERTEBRATE GENOMES; The fish genomes; Compositional properties: a CsCl analysis; Compositional properties: a Cs<sub>2</sub>SO<sub>4</sub>/BAMD analysis; Compositional properties: an analysis of long sequences; Compositional properties of coding sequences and introns; Compositional correlations; Amphibian genomes; Reptilian genomes; Avian genomes; Mammalian genomes; SEQUENCE DISTRIBUTION IN THE VERTEBRATE GENOMES; Gene distribution in the vertebrate genome  
The distribution of genes in the human genome: the two gene spaces  
Properties of the two gene spaces; The distribution of genes in the vertebrate genomes; The distribution of CpG islands in the vertebrate genome; The distribution of CpG doublets and methylation in the vertebrate genome; CpG doublets; Two different CpG levels in vertebrate genomes; Two different methylation levels in vertebrate genomes; THE DISTRIBUTION OF INTEGRATED VIRAL SEQUENCES, TRANSPOSONS AND DUPLICATED GENES IN THE MAMMALIAN GENOME; The distribution of proviruses in the mammalian genome  
The integration of retro viral sequences into the mammalian genome

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## Sommario/riassunto

Structural genomics is the study of the DNA of living organisms. Evolutionary genomics is the study of the history of the genome. These subjects are closely interlinked. They are approached in this book using as a guideline the investigations carried out in the author's laboratory, relevant literature is critically reviewed and some general conclusions are presented. The author and his collaborators have studied a vast number of genomes, ranging from prokaryotes to human, using different approaches, including physical chemistry of DNA, viral integration and molecular cytogenetics. As the subti

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