Unit II: Replication, Maintenance and Alteration of the Genetic Material

Unit 2 covers the structures of nucleic acids (DNA and RNA) and methods for analyzing them biochemically. In addition, this chapter explores some of the insights into gene structure and function, especially in eukaryotes, that the use of these techniques has provided. This includes the separation of mRNA-coding regions into exons, production of multiple proteins from a single gene by differential splicing of the exons in RNA, and the duplication of genes to form gene families with both active and inactive copies.

5. DNA replication I: Enzymes and mechanism

6. DNA replication II: Start, stop and control
7. Mutation and Repair of DNA

8. Recombination of DNA

9. Transposition of DNA

Thumbnail: DNA Polymerase I: Klenow Fragment (PDB 1KLN EBI). (Public Domain; Jawahar Swaminathan and MSD staff at the European Bioinformatics Institute).

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