

Chapter 9 – DNA Based Information Technology (and part of Chapter 8 – Nucleotides and Nucleic Acids)

8.3 Nucleic Acids Chemistry

The following sub-sections are important:

- The Chemical Synthesis of DNA has Been Automated
- Gene Sequences Can be Amplified with the Polymerase Chain Reaction
- DNA Sequencing Technologies are Advancing Rapidly

9.1 Studying Genes and Their Products

The following sub-sections are important:

- The Introduction
- Restriction Endonucleases and DNA Ligases Yield Recombinant DNA
- Cloning Vectors Allow Amplification of Inserted DNA Segments
- Cloned Genes Can be Expressed in Amplify Protein Production
- The Polymerase Chain Reaction Can be Adapted for Convenient Cloning

9.2 Using DNA-Based Methods to Understand Protein Function

The following sub-sections are important:

- DNA Libraries are Specialized Catalogs of Genetic Information
- Fusion Proteins and Immunofluorescence Can Reveal the Location of Protein in Cells
- DNA Microarrays Reveal RNA Expression Patterns and Other Information
- Inactivating or Altering a Gene with CRISPR Can Reveal Gene Function