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Autore	Brown T. A (Terence A.)
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3.1.2 Preparation of a cell extract; 3.1.3 Purification of DNA from a cell extract; Removing contaminants by organic extraction and enzyme digestion; Using ion-exchange chromatography to purify DNA from a cell extract; 3.1.4 Concentration of DNA samples; 3.1.5 Measurement of DNA concentration; 3.1.6 Other methods for the preparation of total cell DNA; 3.2 Preparation of plasmid DNA; 3.2.1 Separation on the basis of size; 3.2.2 Separation on the basis of conformation; Alkaline denaturation; Ethidium bromide-caesium chloride density gradient centrifugation; 3.2.3 Plasmid amplification
 3.3 Preparation of bacteriophage DNA; 3.3.1 Growth of cultures to obtain a high titer; 3.3.2 Preparation of non-lysogenic phages; 3.3.3 Collection of phages from an infected culture; 3.3.4 Purification of DNA from phage particles; 3.3.5 Purification of M13 DNA causes few problems; Chapter 4 Manipulation of Purified DNA; 4.1 The range of DNA manipulative enzymes; 4.1.1 Nucleases; 4.1.2 Ligases; 4.1.3 Polymerases; 4.1.4 DNA modifying enzymes; 4.2 Enzymes for cutting DNA - restriction endonucleases; 4.2.1 The discovery and function of restriction endonucleases
 4.2.2 Type II restriction endonucleases cut DNA at specific nucleotide sequences; 4.2.3 Blunt ends and sticky ends; 4.2.4 The frequency of recognition sequences in a DNA molecule; 4.2.5 Performing a restriction digest in the laboratory; 4.2.6 Analyzing the result of restriction endonuclease cleavage; Separation of molecules by gel electrophoresis; Visualizing DNA molecules in an agarose gel; 4.2.7 Estimation of the sizes of DNA molecules; 4.2.8 Mapping the positions of different restriction sites in a DNA molecule; 4.2.9 Special gel electrophoresis methods for separating larger molecules
 4.3 Ligation - joining DNA molecules together

Sommario/riassunto

Known world-wide as the standard introductory text to this important and exciting area, the sixth edition of Gene Cloning and DNA Analysis addresses new and growing areas of research whilst retaining the philosophy of the previous editions. Assuming the reader has little prior knowledge of the subject, its importance, the principles of the techniques used and their applications are all carefully laid out, with over 250 clearly presented four-colour illustrations. In addition to a number of informative changes to the text throughout the book, the final four chapters have been significantly
