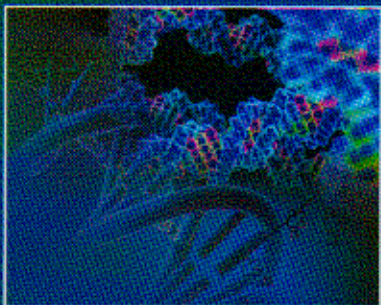


Essentials of Molecular Genetics

Gurbachan S. Miglani



Essentials of Molecular Genetics is primarily designed as a text book for undergraduate students studying molecular genetics. It provides concise yet complete knowledge on the nature, structure, molecular forms, location, organization, packaging, recombination, damage, transposition, repair, protection of genetic material; gene structure, gene organization, gene function, transcription, RNA processing, genetic code, translation, and fate of finished proteins, ribosomes, and used messenger RNAs; and molecular mechanisms of regulation of gene expression in viruses, bacteria and eukaryotes, role of epigenetic modifications in gene regulation, role of DNA and histone modification, and noncoding RNAs and gene silencing in bacteria, viruses and eukaryotes.

The book also deals with various molecular tools, techniques and technologies – DNA/RNA separation, *in situ* hybridization, squash dot hybridization, southern blotting, northern blotting, western blotting, eastern blotting, dot blot, slot blot, electrophoresis, colony hybridization, plaque hybridization, chromosome walking, chromosome jumping/hopping, chromosome landing, nick translation, RNA sequencing, DNA sequencing, RNA synthesis, DNA synthesis, DNA synthesis machines, DNA fingerprinting, DNA markers, microarrays, restriction endonucleases, recombinant DNA technology, and quantitative trait loci mapping, methods for detection of mutations, site-directed mutagenesis, Smith's gene knockout technique, transposon mutagenesis, antisense molecules, hybrid arrested translation, hybrid released translation, transcriptomic analyses, proteomic analyses, etc. – frequently used in molecular genetic studies.

KEY FEATURES:

- A brief historical background for every chapter
- A concise yet complete treatise covering essential aspects of molecular genetics
- Recent progresses discussed
- Nobel Prize winning work finds a special mention
- Simple and lucid language
- Supported by 1360 references, 71 tables, and 402 figures
- Terms defined in context of the present day knowledge
- Separate section on glossary of important terms
- Thought provoking problems at the end of each chapter to test comprehension
- Applications/implications of various discoveries pin-pointed
- Useful for national and international level competitive examinations, entrance tests, and interviews
- Detailed subject index



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