

<<分子生物学>>

图书基本信息

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前言

This textbook is designed for an introductory course in molecular biology. But what is molecular biology? The definition of this elusive term depends on who is doing the defining. In this book, I consider molecular biology to be the study of genes and their activities at the molecular level. When I was a student in college and graduate school I found that I became most excited about science, and learned best, when the instructor emphasized the experimental strategy and the data that led to the conclusions, rather than just the conclusions themselves. Thus, when I began teaching an introductory molecular biology course in 1972, I adopted that teaching strategy and have used it ever since. I have found that my students react as positively as I did. One problem with this approach, however, was that no textbook placed as great an emphasis on experimental data as I would have liked. So I tried assigning reading from the literature in lieu of a textbook. Although this method was entirely appropriate for an advanced course, it was a relatively inefficient process and not practical for a first course in molecular biology. To streamline the process, I augmented the literature readings with hand-drawn cartoons of the data I wanted to present. Later, when technology became available, I made transparencies of figures from the journal articles.

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内容概要

分子生物学是生命科学发展过程中诞生的一门实验性极强的新兴学科。

美国著名分子生物学家Robert F.Weaver遵循这一学科发展的特点，1999年出版了MolecularBiology一书。

全书以原始研究论文为基础，通过对实验的设计、对结果的分析而逐步展开对分子生物学理论的讲述，文字通俗流畅，叙述由浅入深。

随着学科的迅速发展，几经修订再版的MolecularBiology第三版共有分子生物学方法，原核生物、真核生物转录，转录后加工，翻译，DNA复制、重组和转座和基因组学等八部分二十四章，书后还写有术语表。

每一章节都以提出科学问题、展开研究过程开始，以提供思考习题、推荐阅读文献结束，理论讲述逻辑严密，实验过程提炼清晰，特色鲜明、内容详尽，图文并茂易读易记。

是研究生和生命科学相关专业的科研、教学人员不可多得的一本优秀参考书。

书籍目录

About the Author Preface Acknowledgments PART Introduction CHAPTER 1 A Brief History CHAPTER 2 The Molecular Nature of Genes CHAPTER 3 An Introduction to Gene Function PART Methods of Molecular Biology CHAPTER 4 Molecular Cloning Methods CHAPTER 5 Molecular Tools for Studying Genes and Gene Activity PART Transcription in Prokaryotes CHAPTER 6 The Mechanism of Transcription in Prokaryotes CHAPTER 7 Operons: Fine Control of Prokaryotic Transcription CHAPTER 8 Major Shifts in Prokaryotic Transcription CHAPTER 9 DNA-Protein Interactions in Prokaryotes PART Transcription in Eukaryotes CHAPTER 10 Eukaryotic RNA Polymerases and Their Promoters CHAPTER 11 General Transcription Factors in Eukaryotes CHAPTER 12 Transcription Activators in Eukaryotes CHAPTER 13 Chromatin Structure and Its Effects on Transcription PART Posttranscriptional Events CHAPTER 14 Messenger RNA Processing I: Splicing CHAPTER 15 Messenger RNA Processing II. Capping and Polyadenylation CHAPTER 16 Other RNA Processing Events PART Translation CHAPTER 17 The Mechanism of Translation : Initiation CHAPTER 18 The Mechanism of Translation : Elongation and Termination CHAPTER 19 Ribosomes and Transfer RNA PART DNA Replication, Recombination, and Transposition CHAPTER 20 DNA Replication : Basic Mechanism and Enzymology CHAPTER 21 DNA Replication : Detailed Mechanism CHAPTER 22 Homologous Recombination CHAPTER 23 Transposition PART Genomes CHAPTER 24 Genomics and Proteomics Glossary

章节摘录

In 1865, Gregor Mendel (Figure 1.1) published his findings on the inheritance of seven different traits in the garden pea. Before Mendel's research, scientists thought inheritance occurred through a blending of each trait of the parents in the offspring. Mendel concluded instead that inheritance is particulate. That is, each parent contributes particles, or genetic units, to the offspring. We now call these particles genes. Furthermore, by carefully counting the number of progeny plants having a given phenotype, or observable characteristic (e.g., yellow seeds, white flowers), Mendel was able to make some important generalizations. The word phenotype, by the way, comes from the same Greek root as phenomenon, meaning appearance. Thus, a tall pea plant exhibits the tall phenotype, or appearance. Phenotype can also refer to the whole set of observable characteristics of an organism. Mendel saw that a gene can exist in different forms called alleles. For example, the pea can have either yellow or green seeds. One allele of the gene for seed color gives rise to yellow seeds, the other to green. Moreover, one allele can be dominant over the other, recessive, allele. Mendel demonstrated that the allele for yellow seeds was dominant when he mated a green seeded pea with a yellow seeded pea.

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