

## Book Review

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### GENE CLONING AND MANIPULATION.

by Christopher Howe

Cambridge University Press, 1995, 210 pp.

This well written, concise, and clearly illustrated textbook is designed to teach basic concepts underlying standard methods of gene cloning to students with a limited background in biochemical and molecular genetic knowledge. It is not a manual of experimental protocols similar to the protocol manuals found in nearly every molecular biology or molecular genetic laboratory. Instead, it is a textbook that provides students new to this subject some basic background information including concise definitions of terminology that will help the student gain familiarity with general concepts necessary to understand and conduct basic experiments and to facilitate their understanding of the literature.

The book consists of nine chapters with appropriate tables and illustrations on approximately half of the pages. The illustrations are simple black and white line drawings that communicate effectively the basic strategies and concepts underlying experiments. In chapter one entitled "The Tools for the Job," the subjects restriction endonucleases and other modifying enzymes are discussed clearly. The basic principles and techniques for electrophoresis of nucleic acids is also well described in this chapter. Chapter two entitled "Simple Cloning" provides straight forward explanations for basic transformation experiments with a broad but general discussion of various vectors, modifications, linkers, and adapters. Additional vector systems are described in chapter three. The general principles underlying genomic and cDNA library construction are discussed in chapter four. One chapter, chapter six, is entirely devoted to polymerase chain reaction (PCR) methods and experiments. The text for this chapter is relatively limited as the general principles of PCR and its uses are explained in 11 pages. References for all chapters are listed at the end of the textbook and are generally limited to other standard texts, book chapters, and other publications from the mid-1980s

through the early 1990s. This relatively short textbook is well indexed making it relatively easy to find appropriate reading material.

As with any textbook of this nature, the discussions are relatively limited and not always current. For instance, in the discussion of genomic libraries there is a brief mention of yeast artificial chromosomes (YACs), but no mention of more currently used large genomic libraries including bacteriophage and P1 derived genomic clones, BACs and PACs. The last chapter in the book is devoted to a brief presentation of genetic manipulation of other organisms including other bacteria, yeast, drosophila, and vascular plants. This section nicely illustrates the different critical elements involved in modifying the genomes of various organisms.

In summary, this is a clearly written, concise, elementary textbook useful for students with a relatively limited background in gene manipulation and cloning strategies. It will help students in their first laboratory rotations and will be useful in undergraduate classrooms where general laboratory methods are taught. It is doubtful that graduate students in molecular biology, cellular biology, genetics or related fields would find this particular text enormously helpful given the wide variety of texts, papers, laboratory manuals, and on-line molecular biology resources currently available. The book may have utility for non-laboratory based students of other healthcare professions, such as genetic counseling students, who are reading this literature but may not be familiar with the experimental methods that are utilized. I will keep this textbook on the shelves in my laboratory and will encourage rotating students who are new to the field to read particular chapters related to their ongoing experiments.

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