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BOOK REVIEW

PCR cloning, it is still an issue

PCR Cloning Protocols (2nd edn)

B-Y Chen and HW Janes
Humana Press Inc., Totowa, New Jersey; 2002. 439 pp. $121.50, paperback. ISBN 0-89603-973-0

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Reviewed by CM Liu

The invention of PCR in the mid-80s revolutionized molecular biological research, particularly with the continuous development of many innovative applications of PCR-related technologies in the field of genetic manipulation, cloning, sequencing, mutagenesis and diagnosis. The basic PCR technique is relatively easy to master, even for undergraduate students; however, some new PCR-based applications are quite tricky and laborious, and many people have difficulties in obtaining reproducible results. The book 'PCR Cloning Protocols' provides a timely update on some of these new developments. As a protocol book, it is written in a clear manner that can be followed easily.

The book consists of 44 chapters written in five parts: (1) performing and optimizing PCR; (2) cloning PCR products; (3) mutagenesis and recombination; (4) cloning unknown neighboring DNA; and (5) library construction and screening. Each part starts with an introductory chapter that gives an overview of the currently available methods in the particular area and their advantages and disadvantages, followed by protocol chapters that describe individual techniques. For example, in Part 1, in addition to the basic principles, the following techniques are presented: software programs for primer design, single-step PCR optimization, extra-long genomic PCR and RT-PCR, PCR from paraffin-embedded tissues, amplification from GC-rich templates, and methylation-specific PCR.

Each chapter is written as an independent article, with an Introduction, Materials and methods, and Notes that provide additional technical information. One problem with this book is the lack of cross-references to the different chapters. For example, the same formula for calculating the T_m value has been repeated at least six times throughout the book (Chapters 1–3, 15, 16 and 39). In Chapter 8, Note 3, the authors mention computer programs for primer design, without citing Chapter 2 that is dedicated to this topic. There are also some technical flaws in the book. For example, in Chapter 1, a strange amplification formula $[Y = X(1 = \text{efficiency})^n]$ was given by the authors.

In summary, although some minor problems exist here and there, the book provides a valuable reference source for PCR-related technologies and protocols for students, postdocs and technicians.

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