

Preface to the third edition

As I found when preparing the second edition of this text, advances in genetics continue to be made at an ever increasing rate, which presents something of a dilemma when writing an introductory text on the subject. In the years since the second edition was published, many new applications of gene manipulation technology have been developed, covering an increasingly diverse range of disciplines and applications. The temptation in preparing this third edition, as was the case for its predecessor, was to concentrate on the applications and ignore the fundamental principles of the technology. However, in initial preparation I was convinced that a basic technical introduction to the subject should remain the major focus of the text. Thus, some of the original methods used in gene manipulation have been kept as examples of how the technology developed, even though some of these have become little used or even obsolete. From the educational point of view, this should help the reader cope with more advanced information about the subject, as a sound grasp of the basic principles is an important part of any introduction to genetic engineering. I have again been gratified by the many positive comments about the second edition, and I hope that this new edition continues to serve a useful purpose as part of the introductory literature on this fascinating subject.

In trying to strike a balance between the methodology and the applications of gene manipulation, I have retained the division of the text into three sections. **Part I** deals with an introduction to basic molecular biology, **Part II** with the methods used to manipulate genes, and **Part III** with the applications. These sections may be taken out of order if desired, depending on the level of background knowledge. Apart from a general revision of chapters retained from the second edition, there have been some additional changes made. The emerging importance of bioinformatics as a distinct discipline is recognised by a new chapter devoted to this topic. To help the student of genetic engineering, two additional features have been included. **Text boxes** highlight some of the important aspects of the topics, and **chapter summaries** have been provided, which include aims and learning outcomes along with a listing of **key words**. Along with the concept maps, I hope that these additions will help the reader to make sense of the topics and act as a support for studying the content. By using the summaries, key words, text boxes, and concept maps students should be able to tailor their study to suit their own individual learning styles. I hope that the changes have produced a balanced treatment of the field, whilst retaining the introductory nature of the text and keeping it to a reasonable length despite an overall increase in coverage.

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