

5th Edition

Molecular Biology and Biotechnology

Edited by John M Walker and Ralph Rapley



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Edited by

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Preface

One of the exciting aspects of being involved in the field of molecular biology is the ever-accelerating rate of progress, both in the development of new methodologies and in the practical applications of these methodologies. Indeed, such developments led to the idea of the first edition of *Molecular Biology and Biotechnology* and subsequent editions have reflected the fast-moving nature of the area, not least this latest edition, which continues to reflect recent developments, with new chapters in developing areas such as genome technology, nanobiotechnology, regenerative medicine and biofuels.

The first six chapters deal with the technology used in current molecular biology and biotechnology. These deal primarily with core nucleic acid techniques and protein expression through microbial and genetic detection methods. Further chapters address the huge advances made in gene and genome analysis and update the rapid advances into yeast analysis, which is providing very exciting insights into molecular pathways. Molecular biology also continues to affect profoundly progress in biotechnology in areas such as vaccine development, use and application of monoclonal antibodies, clinical treatment and diagnosis, the production of transgenic animals, and many other areas of research relevant to the pharmaceutical industry. Chapters on all these areas have been retained and fully updated in this new edition and new chapters introduced on the applications of molecular biology in the areas of drug design and diseases, and regenerative medicine. In addition, we continue to ensure that biotechnology is not just considered at the gene level and full consideration continues to be given to applications and

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manufacturing, with chapters on downstream processing, biosensors, the applications of immobilised biocatalysts, and a new chapter on the developing area of biofuels.

Our continued intention is that this book should primarily have a teaching function. As such, this book should prove of interest both to undergraduates studying for biological or chemical qualifications and to postgraduate and other scientific workers who need a sound introduction to this ever rapidly advancing and expanding area.

John M. Walker
Ralph Rapley

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