Preface

This edition was written to accomodate the ongoing innovations and developments in DNA technology. It covers a wide range of new methods (and new uses of existing methods) as well as terminology, and it reflects current thinking in both *in vitro* and *in vivo* studies. The opportunity was also taken to update and extend entries from previous editions. Every effort has been made to present up-to-date information – much of it newly published in mainstream journals within the last 6–9 months.

The dictionary is designed for use throughout the biomedical sciences, particularly in areas such as:

- biotechnology
- diagnosis (hereditary and infectious diseases)
- drug development
- epidemiology
- forensic science
- gene therapy
- genetically modified (GM) foods
- genomics
- industrial enzymes
- microbiology
- molecular biology
- oncology
- systems biology
- taxonomy
- vaccine development

This edition contains over 3200 references to published papers and reviews. Some of these references are the source(s) of information on which particular entries are based; they can provide additional details (e.g. protocols), and they also permit the reader to make his or her own assessment of a given source. Other references are included in order to indicate further information which is relevant to a given entry.

Some pervasive topics – for example, PCR, forensic applications, stem cells, microRNAs, gene fusion, phages, overexpression, retroviruses, typing, microarrays – are treated more extensively. These essay-style entries are intended to bring the newcomer up to date with a broad working knowledge of the area. Such entries may also be of use to the over-specialized researcher.

Commercial systems and materials are widely used in DNA technology, and a range of entries describe these products. This kind of entry may be useful, for example, when a paper offers no information about

a given product other than "used according to the manufacturer's instructions" – leaving the reader with unanswered questions on the product, the protocol or the principle. Accordingly, these entries give brief overviews of products, and their uses, and in many cases they also cite relevant papers describing work in which a given product has been used. (The mention of any given commercial product should not be taken to indicate endorsement by the author or publisher.) Where the names of products and systems are known to be trademarks this has been indicated.

Notes for the user on the following pages will facilitate use of the dictionary. The attention of the reader is drawn, in particular, to the item on *alphabetization* (which is not as simple as A, B, C...).

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Clannaborough (UK), April 21st 2012