
Book Reviews

Kornberg, A.: Supplement to DNA Replication, 1982. Oxford: W. H. Freeman and Co. Ltd. 1982. 273 pp., 48 figs. Soft bound £ 7.50.

The 1982 supplement to Arthur Kornberg's "DNA replication" is just as useful (and indispensable) to advanced undergraduate and graduate courses as was the original publication which came out in 1980. The earlier book takes in all the biochemical, genetic and physiological aspects of DNA replication and was designed for students as well as the most advanced scientist. The supplement that is now appearing two years later was necessary to keep pace with the rapid advances in research in the area. Surprisingly, the supplement is quite large (273 pages), reflecting the intensity of research in DNA replication, much of it of course by Arthur Kornberg and his colleagues.

In the supplement, each of its seventeen chapters are begun with an abstract of that chapter's contents. For the student, this is an improvement over the 1980 volume (even though it is hard to see where improvements can be made in that excellent first volume). As in this earlier book, the supplement makes free use of diagrams and tables, and has a wide margin so useful to the student. The same chapter headings (all seventeen) as appear in the first book, appear again in the supplement. However, some have been expanded relative to others, showing areas where research effort has made solid gains. This is especially noticeable for the chapter on "Binding and Unwinding Proteins and topoisomerases" – the DNA binding proteins, the "packaging proteins" and the ATPases dependent on DNA (the helicases, topoisomerases, gyrases and others). A rapidly expanding area of research. Another chapter to receive greater attention is that on repair, recombination, transformation, restriction and modification. Repair of DNA, including consideration of N-glycosylases, SOS inducible functions and human diseases with defective repair all find a place here. However, as pointed out by Kornberg, "jumping genes" must be one of the most actively researched subjects in the biology of DNA, and this of course can be found in this chapter.

A most readable, yet accurate and up-to-date account of the most active areas of research in DNA replication, this supplement should be in every library. The Subject Index in the supplement incorporates subjects from both volumes, so that the companion books should be kept together for optimum value to the student.

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Maniatis, T.; Fritsch, E. F.; Sambrook, J.: Molecular Cloning: A Laboratory Manual. Cold Spring Harbor: Cold Spring Harbor Laboratory 1982. 545 pp., several figs. Soft bound \$ 48.00.

This manual was originally written to serve as a guide to those who have had little experience with molecular cloning. It began life as a collection of laboratory notes that were used during the 1980 and 1981 Cold Spring Harbor courses on the Molecular Cloning of Eukaryotic Genes. These have been revised and re-written to give the present format.

The book contains much basic material, and deals in detail with almost every laboratory task met with in molecular cloning. The authors have been careful to deal with principles underlying each procedure, including therefore background information and references for ready use. The book is divided into twelve chapters, dealing first with vector-host systems (plasmids, bacteriophage λ ; cosmids and single-stranded bacteriophages), and care of bacterial strains and viruses including bacteriophages and plasmids. Then follows chapters on enzymes used in molecular cloning, gel electrophoresis, extraction of mRNA, synthesis and cloning of c-DNA and introduction of plasmid and bacteriophage λ DNA into *E. coli*. Perhaps the most useful part of the book then follows, with carefully described chapters on the construction of genomic libraries in both bacteriophage λ and cosmid vectors, another on the analysis of recombinant DNA clones. The final chapter concerns itself with vectors that express cloned DNA in *E. coli*.

Perhaps the general usefulness of the book is shown by the detail included in the 70 pages of appendix. This gives concise, practical details on the sort of questions that arise when new techniques are embarked on in the biochemical laboratory, e.g. quantitation of DNA and RNA, measurement of radioactivity in nucleic acids, autoradiography, a protocol for sequencing by Maxam-Gilbert technique, and much more. The book is finished off with a long list of references and a very full index.

In summary then, a most useful book, especially for the biochemist or biologist who is about to embark on molecular cloning for the first time.

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