Gene Regulation: Biology of Antisense RNA and DNA. (Raven Press Series on Molecular and Cellular Biology, Vol. 1). R. P. Erickson and J. G. Izant (eds). Raven Press, New York, 1991. Pp. 384. Hardback, price £52.00. ISBN 0 88167 854 6.

While enthusiasts, targeting inhibition of pathological gene expression with complementary nucleic acids, are currently rushing gleefully into clinical trials that are doomed to failure from the outset, there remain a few more sober and serious scientists working in the field of antisense research, and, thankfully, some of these were invited to contribute to the present multiauthor volume. For the most part, '*Gene Regulation: Biology of Antisense RNA and DNA*' is on a higher intellectual and moral plain than its several multiauthor antisense predecessors, although I doubt that many of us really need to know about molecular orbital calculations on ribozyme–RNA cleavage intermediates, it being some few years since I last encountered a dz^2 orbital. Regrettably, the standard degenerates to a more pedestrian level during the final third of the book, and the last few chapters branch off into reviews on the subject of oncogenes with barely a mention of antisense.

The chapters are mercifully short and mostly succinct, covering a wide range of topics under the general headings of natural antisense, ribozymes, oligonucleotides (including intracellular transport and liposomal delivery), antisense RNA, and applications of antisense strategies in biological studies and in the regulation of viral and neoplastic cell proliferation. Without wishing to catalogue the good and the not so good, there are several highlights which seem worthy of comment. Firstly, having previously read several antisense reviews where the reader was informed that dsRNA unwinding/modifying enzyme activity in cells was responsible for some of the failures of antisense RNA experiments, it was reassuring to be told more than once that, where present, such enzymes could, in fact, promote antisense efficacy. Liebhaber *et al.* discuss the apparent paradox that native mRNAs exist with extensive intramolecular secondary structure, which does not appear to affect efficiency of translation and yet the introduction of intermolecular secondary structure with an antisense nucleic acid is supposed to do just that, and Izant presents some very interesting work on incorporating antisense sequences into structural RNAs. The chapter entitled 'Antisense Therapeutics' is noteworthy for filling eight pages with the minimum of hard facts, while Neckers *et al.* engage in a speculative discussion of the role of N-*myc* in neuroectoderm-derived cells. Indeed, having read some of the more sophisticated contributions, such as the excellent chapter by Woolf on 'Antisense in *Xenopus* Oocytes and Embryos', which draw attention to caveats and factors to be taken into consideration when attempting to apply antisense strategies to particular genetic problems, it is then difficult to swallow the results of antisense applications without, at the same time, being reassured on these points.

A slight smile did cross the lips when reading the suggestion of Freier *et al.* that you can always hope the regions of extensive partial complementarity to an antisense oligonucleotide in non-targeted mRNAs will be buried deep within the secondary and tertiary structure of the latter. In fact, it may be possible to control the stringency of hybridization in living cells, not by increasing the temperature or formamide concentration, but by judicious incorporation of an appropriate number of helix destabilizing backbone modifications within the antisense oligonucleotide. On the question of origination, the Zamecnik chapter is at pains to point out mention of the antisense idea in the literature as early as 1958, while Wickstrom tends to favour Belikova *et al.* 1967, as the originators of the concept. One cannot help but wonder if these prior publications should not invalidate Dr Zamecnik's subsequent patent on the application of antisense oligonucleotides.

Overall, the book is well worth reading, if only for some of the more exceptional contributions.

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Recombinant DNA Laboratory Manual. (Revised Edition). J. W. Zyskind and S. I. Bernstein. Academic Press (Harcourt Brace Jovanovich), San Diego, 1992. Pp. 224. Comb-bound, price £17.00. ISBN 0 12 784401 5.

This is an update of an edition first published in 1989 and includes a new chapter on the polymerase chain reaction (PCR) as well as several additional procedures.

Zyskind and Bernsteins' book is based on laboratory courses taught at San Diego State University, and is reminiscent of the early Cold Spring Harbor Laboratory genetic engineering manual *Advanced Bacterial Genetics* by Davis, Botstein and Roth. The manual is divided into 10 chapters, or 'Labs' as they are called in the text, which are designed to teach the fundamentals of recombinant DNA technology. Techniques ranges from the measurement of bacterial growth parameters, through to DNA isolation and manipulation, sequencing, and ultimately the PCR technique. Each chapter has an introductory outline of the theory behind the procedures, followed by protocols containing helpful checklists of the materials required. The book covers most of the basic procedures used in a molecular biology laboratory and is well referenced. A number of common protocols not covered in the chapters are listed in the appendices, which also contain sections on laboratory safety, and the use of computers in a molecular biology laboratory. With computers being such an integral part of the molecular biology laboratory an overview of some of the more commonly used computer systems is particularly useful.

This manual is by no means an exhaustive list of recombinant DNA techniques and subjects such as cDNA cloning and expression are not covered. However, it contains the basics, sits easily on the bench and is well suited to those