

chemistry, frequently and conveniently tabulated. I also think that it will be very useful for teaching graduate courses.

In order for the book to be completely up to date, I would have preferred the authors to include some chemistry of oligonucleotide derivatives and analogues, as well as template-directed chemical

synthesis and a wider coverage of chemical probing. These are rather minor objections, however, and I recommend the book for researchers doing nucleic acid chemistry or graduate courses.

Peter E. Nielsen

Control of Messenger RNA Stability; Edited by Joel G. Belasco and George Brawerman, Academic Press; San Diego, 1993; xviii + 517 pages. \$79.95, £61.00. ISBN 0-12-084782-5.

A major factor in the control of protein synthesis is the availability of the relevant mRNAs. It is now well recognized that the steady-state level of mRNAs is determined not only by the regulation of transcription but also by control of their stability. In recent years much factual information has accumulated about factors influencing mRNA stability and degradation, but our current understanding of the mechanisms involved in the control of the degradative processes is as yet fragmentary. It is timely, therefore, to take stock, and this book succeeds in bringing together in a well-organized fashion a wealth of useful and detailed information.

The volume is divided into three sections dealing with prokaryotic mRNA (part I: 6 chapters), eukaryotic mRNA (part II: 11 chapters) and methods of analysis (part III: 1 chapter), the last section being intended to serve as an introductory guide for newcomers to the field. The first chapters of part I and part II, each written by one of the editors, give a useful overview of the topics covered in detail by specialists, and the final chapter by both editors presents a useful discussion of the experimental approaches and their limitations to the determination of mRNA decay. The individual specialist chapters of part I cover the following topics in detail: The role of the 3' end in mRNA stability and decay; 5' mRNA stabilizers; RNA processing and

degradation by RNase K and RNase E; RNA processing and degradation by RNase III; Translation and mRNA stability in bacteria: a complex relationship. Part II deals with Hormonal and developmental regulation of mRNA turnover; Control of the decay of labile protooncogene and cytokine mRNAs; Translationally coupled degradation of tubulin mRNA; Iron regulation of transferrin receptor mRNA stability; Degradation of a non-polyadenylated messenger: Histone mRNA decay; mRNA turnover in *Saccharomyces cerevisiae*; Control of mRNA degradation in organelles; Control of poly(A) length; mRNA decay in cell-free systems; Eukaryotic nucleases and mRNA turnover. Each chapter is essentially self-contained and there is little overlap of any significance. The chapters are well referenced and there is an extensive index.

The book can be highly recommended to research workers in the field and anyone else interested in topics of current importance such as structural features which enhance mRNA stability or promote degradation, current knowledge of the importance of various degradative enzymes, the relationship between mRNA translation and decay and other aspects concerned with mRNA stability.

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