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BOOK REVIEWS

Progress in Nucleic Acid Research and Molecular Biology, Vol. 38. Edited by WALDO E. COHN and KIVIE MOLDAVE. Published 1990 by Academic Press, San Diego and London. No. of pages: 386. ISBN: 0-12-540038-1. Price: $65.00.

The following major topics are included in this volume:

—Control of prokaryotic translational initiation by mRNA secondary structure;
—Molecular genetics of Na, K-ATPase;
—Retroviral-mediated gene transfer;
—Structure–function relationships in *Escherichia coli* promoter DNA;
—Gene expression in seed development and germination;
—Transcriptional and translational regulation of gene expression in the general control of amino-acid biosynthesis in *Saccharomyces cerevisiae*;
—Mechanisms regulating transient expression of mammalian cytokine genes and cellular oncogenes.

This book would be useful for people working in molecular biology, biophysics, biochemistry and biology.

Methods in Enzymology, Vol. 174. Biomembranes, Part U, Cellular and Subcellular Transport: Eukaryotic (Non-epithelial) Cells. Edited by SIDNEY FLEISCHER and BECCA FLEISCHER. Published 1989 by Academic Press, San Diego and London. No. of pages: 725. ISBN: 0-12-182075-0. Price: $89.00.

This book contains up-to-date information on cellular and subcellular transport. The main topics included are as follows:

—Transport in subcellular organelles of animals: plasma membranes and derived transporters, intracellular organelles;
—Transport in plants: higher plants, lower plants, organelles;
—Transport in single-cell eukaryotes: fungal cells.

This book would be useful for people working in molecular biology, biophysics, biochemistry and biology.

Methods in Enzymology, Vol. 180. RNA Processing, Part A, General Methods. Edited by JAMES E. DAHLBERG and JOHN N. ABELSON. Published 1989 by Academic Press, San Diego and London. No. of pages: 600. ISBN: 0-12-182081-5. Price: $75.00.

That RNA processing is one of the most active and rapidly developing areas of biology can be seen from the great increase in papers published on the subject and the high attendance at meetings and workshops in this field.

Because RNAs rarely, if ever, function as primary transcription products, they all must undergo various forms of processing. This can be as simple as the removal of one or a few nucleotides at one end, or as complex as splicing (*cis* or *trans*), modification of nucleotide bases, and 3′ cleavage and polyadenylation. Hence, RNA processing plays a key role in the expression of genetic information.

Numerous methods have been developed or adapted for the study of RNA processing which pertain to preparation of substrates, to preparation and purification of processing enzymes or factors, and to analysis of the resulting products. Methods have also been developed that allow investigators to study the structures of the precursors, the cofactors, and the enzymes or complexes that catalyze function at individual steps in processing. In many instances, approaches or procedures have very wide applicability to other areas of research, such as in cell structure and physiology, in transcription and translation, and in enzymology. In other instances, the methods are defined by the scope of the problem at hand, so the methods are primarily applicable to the processing of RNA. As in most fields it is impossible to predict the breadth of applications for which a procedure or method will be used. This volume contains the following main topics:

—Preparation of substrates: purification of RNA molecules, *in vitro* synthesis of RNA, *in vivo* preparation of substrates;
—Characterization of RNAs: primary structure, secondary structure, RNA functions;
—RNA interactions: cross-linking, other methods.

This book would be very useful for people working in biochemistry and biophysics in particular, as well as for those working in molecular biology, physiology and for advanced students.