Book Reviews

Intracellular Protein Catabolism

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Edited by E.A. Khairallah, J.S. Bond and J.W.C. Bird

A.R. Liss; New York, 1985

750 pages. £75.00

This book contains articles describing the proceedings of the fifth International Symposium on Intracellular Protein Catabolism held in Airlie, Virginia, in 1984. Those of us who were privileged to be there witnessed presentations nicely described in the book which concern recent developments in a rapidly expanding field. The book is organised in three parts which deal with: (a) Cellular proteases and their inhibitors; (b) Basic mechanisms of intracellular proteolysis; (c) Regulation of protein turnover.

The last few years have seen considerable advances in each of these areas by those wanting to understand the mechanisms by which cells continuously degrade proteins and the regulatory controls which act on these mechanisms. The articles give an accurate representation of current concepts, thinking and data in a field, which although fundamental to cellular physiology, is not understood and appears to operate by multiple mechanistic systems (cf. protein synthesis).

In part (a) there is detailed consideration of the ATP-ubiquitin pathway in eukaryotes and other ATP-dependent systems in prokaryotes and organelles. There is also considerable attention paid to the subject of calcium-dependent proteases and their possible physiological roles.

In part (b) the role of protein covalent modification in the degradative process is discussed together with the extent to which the lysosomal system is operative in the liver. This section also contains data on how protein microinjection is contributing to our understanding of the molecular aspects of the degradative processes.

The final section (c) deals with the endocrine regulation of catabolic processes. This section also deals with the regulation of protein catabolism in muscle (cardiac and skeletal) which, although of fundamental importance in whole body protein homeostasis, still lacks definition in molecular terms.

The value of this book lies in defining the current experimental philosophy and problems of workers in the field: it is excellent for those wanting a feel for the subject of protein degradation; and since the ramifications of the phenomenon seemingly reach into every nook and cranny of cell and molecular biology, such persons are in ever-growing numbers. Whether your appetite is whetted by the recent FEBS Letters Review [Intracellular protein catabolism: state of the art (FEBS 3543) *R.J. Mayer, F. Doherty:* FEBS Letters 198 (1986) 181–193] or not the book is well worth having. There are no comparable informative books currently available.

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