

Volume 91, number 2

FEBS LETTERS

July 1978

Structure and Function of Haemocyanin

Edited by J. V. Bannister

Springer-Verlag; Berlin, Heidelberg, New York, 1978

xiv + 295 pages. Softback DM 76; \$33.50

This book includes thirty-five reports presented at the Fourth International Meeting on Haemocyanin, recently held in Malta, and an introduction by R. J. P. Williams. The successive chapters are original contributions on the subject, pointing out on the one hand, the recent progress in special fields all having a general interest and, on the other hand, an appreciation of the personal work of the authors.

The first eight papers are devoted to haemocyanin studied as a protein. Its specificity according to various zoological groups, from molluscs to arachnidae, has been known for a long time; its study at a molecular level is now proceeding in a satisfactory way. The breakdown of the native protein into subunits and their structure and properties are presented in the six following papers and its physical properties in three, dealing with nuclear magnetic resonance, fluorescence and absorption. Haemocyanin has been studied as a copper complex (active site of oxygen transport, photooxidation, X-ray photoelectron spectroscopy, electron paramagnetic resonance) in five reports. Various reactions of the copper respiratory protein are discussed in eleven chapters, chiefly devoted to oxygen binding and to interaction with

chemical reagents on specific sites of the protein molecule. Two physiological reports present evolutionary studies and researches on the production of the respiratory protein in gasteropod molluscs.

This volume is of great interest in many respects, for biochemists as for biologists working on oxygen transport by blood and on evolutionary problems. Proteins of very high molecular size such as haemocyanins provide exceptional possibilities for the study of dissociation and association of subunits. Special attention in this field must be concerned with the structure of crystals and with the molecular coordination of subunits, as shown previously in the case of hemoglobins of high molecular size in invertebrates. The nature of the mechanism of oxygen transport by a copper active site and the structural aspects of the specificity of haemocyanins remains partly unknown. Therefore, this volume is of a much wider interest than a monograph for the specialist. It contains information on general problems of protein chemistry as well as on comparative biochemistry considered at molecular level.

Jean Roche

Chemistry and Biology of Thrombin

Edited by R. L. Lundblad, J. W. Fenton and K. G. Mann

Ann Arbor Science; 1977

564 + xii pages. £14.20; \$24.75

This book contains the proceedings of a conference on the Chemistry and Biology of Thrombin held at the Mayo Clinic and Foundation on March 31 and

April 1, 1977. Since publication occurred later in the same year it is clear that the major criterion laid down by the Editors, i.e. that of speed, was met. However,

it is open to question whether speed of publication, important though it is, should be the only, or even the major, determining factor. Thus this volume comes with only a minimal index (4 pages) (although perhaps one should be happy that there is one at all) and with no record of the discussion which presumably followed each paper. However, possibly there was no time for discussion since 42 presentations appeared to have been packed into the two days of the conference. Either the participants worked very long hours or the sessions must have borne a close resemblance to the old-style FASEB meetings. Under such conditions it seems rather extraordinary that no less than 9 of the papers presented have one of the editors as a co-author, especially since there are some notable omissions. For example, although thrombin binding to platelets is discussed at length in several articles, there is no contribution from P. W. Majerus and his coworkers who have done perhaps the best studies in this area. Indeed the whole area of platelet--thrombin interaction is not at all well covered with the exception of the article by Detwiler and Wasiewski which presents a much more integrative account of this particular topic than is the case for most of the

other articles. It would have been very interesting to have had Majerus' comments on the same topic in this volume as well as the discussion between these two workers which would undoubtedly have ensued.

However, studies on platelet--thrombin interaction form a relatively minor component of the volume which is largely devoted to studies on the structural chemistry and enzymic properties of the various forms of thrombin and to the properties of interaction of thrombin with the various proteins which may modulate its activity *in vivo*. Too many of these articles are either very brief quasi-abstracts or mini-research journal papers and all too few attempt to bring together and correlate information so as to provide a coherent view of the field. I cannot therefore think that this book will be of much use except possibly to the specialist with a particular interest in the properties or mode of action of thrombin. However, since most of the information is likely to appear in properly edited primary journals, one wonders whether even this audience will find the book to be sufficient value to warrant its purchase.

M. C. Scrutton

Plasma Proteins. Analytical and Preparative Techniques

by P. C. Allen, E. A. Hill and A. M. Stokes
Blackwell Scientific; Oxford, 1977
ix + 254 pages. £11.75

The best that can be said about this book is that it contains some information of value to those interested in the plasma proteins. This is almost inevitable because, as is stated in the preface, 'most of the information given is derived ostensibly from the operating instructions issued by the various manufacturers concerned'. As the rest of the book suffers from serious defects, the above quote must raise the question whether, to rely on the manufacturers operating instructions, which are free, would not be a better decision than to purchase the book.

In a brief review only a few of the many errors can

be noted: a particularly awful one is the statement on page 191 that 'proteinase is a proteolytic enzyme acting on the middle linkages of peptides. Pepsin and trypsin are examples'. Isoelectric focussing is described as an analytical and as a preparative technique, but without mention of the important work of Radola. Apparently the authors have heard of isoelectric focussing in layers of G-75 Sephadex, which in fact has been practiced both analytically and preparatively for at least 7 years. On page 72 they remark, 'the use of thin layers of Sephadex has considerable future potential in this context'.