

Methods of Enzymatic Analysis

Third Edition

Volume XI
Antigens and Antibodies 2

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Editors: Jürgen Bergmeyer and Marianne Graßl

Volume XI
Antigens and Antibodies

Editorial Consultant: René F. Masseyeff



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Preface to the Series

"Methods of Enzymatic Analysis" appeared for the first time in 1962 as a one-volume treatise in German. Several updated and improved editions in English and German have been published since then. The latest English edition appeared in 1974.

In the meantime, enzymatic analysis has continued to find new applications, refinements and extensions at a pace that justifies -- indeed, demands -- the preparation of a new and completely revised edition. However, the field has grown so enormously that it can no longer be surveyed adequately by one person. Fortunately, therefore, I am supported in this new enterprise by Dr. M. Graßl, who is highly experienced in biochemical analysis, and Dr. J. Bergmeyer, who represents the younger generation of biochemists.

With the 1974 edition of "Methods of Enzymatic Analysis" as a starting point for our work towards the new edition, it soon became obvious that many chapters had to be eliminated, re-written or added. Moreover, the increased number of analytes that can now be determined enzymatically and of enzymes regularly requiring analysis, especially in the clinical laboratory, together with the emergence of an entirely new field of application through the technique of the enzyme-immunoassay, demanded a new arrangement and subdivision of the contents, if the vast range of material was to be dealt with properly and lucidly.

The result is the plan of the work printed on the page opposite the title page of this volume. Of course, it would be impossible to publish a whole series such as this at one moment and still maintain an equal degree of topicality for all contributions. Therefore, we decided to produce the series at a pace of several volumes per year. The volumes will not necessarily appear in their numerical order, but will be made available as they can be planned and completed.

As before, the purpose of the work is to provide reliable descriptions of well-developed procedures of enzymatic analysis in the broadest sense of the term. Special efforts are being made to arrange every chapter, and to co-ordinate the contents of all chapters, in such a way that the volumes are useful as laboratory manuals for daily work.

Internationally-agreed enzyme nomenclature as well as quantities and units correlating with the "Système International d'Unités" are used wherever possible in order to make statements and data unambiguous and comparable over time and space.

All contributions are and will be written in English: however, contributors come from all over the world and their manuscripts naturally show various versions of English. These have to be harmonized in style and spelling in order to achieve uniformity throughout the series without, we hope, entirely eliminating each author's personal approach. Professor Donald W. Moss has kindly agreed to undertake this task. We agreed with him to use modern English spelling, but to try to minimize differences between British and American practice. We hope that this will be considered

as a fair solution and one which will make the series accessible to as wide a readership as possible.

Thanks are due to the authors in the first place for responding so readily to our invitations, for writing their chapters so diligently within a short time and for communicating their experience and expertise. We are also indebted to all colleagues who gave their advice and to Professor Moss for accepting the task of language editor. Finally I wish to record my gratitude to Verlag Chemie for the fruitful and excellent co-operation during all stages from planning to production.

Tutzing, February 1983

Hans Ulrich Bergmeyer

Preface to Volume XI

This is the second volume devoted to "Antigens and Antibodies". The application of enzyme-immunoassays to antigens and antibodies has grown so fast that it could only be treated adequately in two volumes.

This volume contains the parts "Antigens and Antibodies in Chlamydial and Bacterial Diseases" and "Antigens and Antibodies in Fungal and Parasitic Diseases". In a third part, methods for the detection of some important plant viruses are described: these methods represent the beginnings of a new field of analysis, the importance of which becomes apparent when the scale of losses by virus-induced diseases in agriculture and fruit-growing is considered.

The collection of methods presented here is not meant to be comprehensive. Rather, we have attempted to select established methods for the determination of the most important analytes and to demonstrate the various types of enzyme-immunoassay. The editors are aware that some redundancy, e.g. in illustrations of reaction schemes or in descriptions of reagent preparations, might have been avoided, but again the philosophy was followed that all instructions required for the performance of an assay should be easily at hand: the user should not have to search for details in places other than the chapter with which he is concerned.

The topics discussed in the general parts of Vol. IX and Vol. X, and partly in the preface to Vol. IX, are relevant to this volume also. These include problems of standardization, data regarding the nature and concentrations of constituents of reagent solutions for immunological and enzymatic reactions, and different meanings and definitions of terms in bacteriology, mycology, microbiology, parasitology and analytical chemistry. Since the contributors to this volume come from various disciplines, some of which have developed particular conventions in publication, it was impossible to achieve protocols as uniform and complete as we would have liked. Nevertheless, we are most obliged to all authors for their efforts to understand the goal of this series and for their co-operation in preparing their chapters accordingly. Again we acknowledge gratefully the excellent and diligent assistance given by the editorial consultant, Professor René F. Masseyeff.

Tutzing, March 1986

Hans Ulrich Bergmeyer

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