

PREFACE

The rapid pace at which new data is currently accumulated in science presents one of the significant problems of today — the problem of rapid retrieval of information. The fields of biochemistry and molecular biology are two areas in which the information explosion is manifest. Such data is of interest in the disciplines of medicine, modern biology, genetics, immunology, biophysics, etc., to name but a few related areas. It was this need which first prompted CRC Press, with Dr. Herbert A. Sober as Editor, to publish the first two editions of a modern *Handbook of Biochemistry*, which made available unique, in depth compilations of critically evaluated data to graduate students, post-doctoral fellows, and research workers in selected areas of biochemistry.

This third edition of the *Handbook* demonstrates the wealth of new information which has become available since 1970. The title has been changed to include molecular biology; as the fields of biochemistry and molecular biology exist today, it becomes more difficult to differentiate between them. As a result of this philosophy, this edition has been greatly expanded. Also, previous data has been revised and obsolete material has been eliminated. As before, however, all areas of interest have not been covered in this edition. Elementary data, readily available elsewhere, has not been included. We have attempted to stress the areas of today's principal research frontiers and consequently certain areas of important biochemical interest are relatively neglected, but hopefully not totally ignored.

This third edition is over double the size of the second edition. Tables used from the second edition without change are so marked, but their number is small. Most of the tables from the second edition have been extensively revised, and over half of the data is new material. In addition, a far more extensive index has been compiled to facilitate the use of the *Handbook*. To make more facile use of the *Handbook* because of the increased size, it has been divided into four sections. Each section will have one or more volumes. The four sections are titled:

- Proteins — Amino Acids, Peptides, Polypeptides, and Proteins
- Nucleic Acids — Purines, Pyrimidines, Nucleotides, Oligonucleotides, tRNA, DNA, RNA
- Lipids, Carbohydrates, Steroids
- Physical and Chemical Data, Miscellaneous — Ion Exchange, Chromatography, Buffers, Miscellaneous, e.g., Vitamins

By means of this division of the data, we can continuously update the *Handbook* by publishing new data as they become available.

The Editor wishes to thank the numerous contributors, Dr. Herbert A. Sober, who assisted the Editor generously, and the Advisory Board for their counsel and cooperation. Without their efforts this edition would not have been possible. Special acknowledgments are due to the editorial staff of CRC Press, Inc., particularly Ms. Susan Cubar Benovich, Ms. Sandy Pearlman, and Mrs. Gayle Tavens, for their perspicacity and invaluable assistance in the editing of the manuscript. The editor alone, however, is responsible for the scope and the organization of the tables.

We invite comments and criticisms regarding format and selection of subject matter, as well as specific suggestions for new data (and their sources) which might be included in subsequent editions. We hope that errors and omissions in the data that appear in the *Handbook* will be brought to the attention of the Editor and the publisher.

Gerald D. Fasman
Editor
August 1975

PREFACE TO AMINO ACIDS, PEPTIDES, POLYPEPTIDES, AND PROTEINS, VOLUME II

The section of the *Handbook of Biochemistry and Molecular Biology* on Amino Acids, Peptides, Polypeptides, and Proteins is divided into three volumes. The second volume contains information mainly on Proteins.

Data on cleavage, chemical modification and hydrolysis of proteins are contained herein. Physical-chemical data on proteins, such as refractive index increments, molecular extinction coefficients, pK values, viscosity data, dimensions of the amide group, and protein conformation are listed. Molecular parameters of plasma proteins, glycoproteins, histones, muscle proteins, and many other proteins are tabulated. Properties of lectins, protein ligands, proteinase inhibitors, and proteoglycans are listed.

The third volume will contain additional material on proteins and the first volume contains information on amino acids, amino acid derivatives, etc.

Although the data, for which the editor alone is responsible is far from complete, it is hoped that these volumes will be of assistance to those working in the field of biochemistry and molecular biology.

Gerald D. Fasman
Editor
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