CRC

Handbook of Biochemistry and Molecular Biology

3rd Edition

Proteins —Volume III

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EDITOR

Gerald D. Fasman, Ph. D.

Rosenfield Professor of Biochemistry
Graduate Department of Biochemistry
Brandeis University
Waltham, Massachusetts

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The following is a list of the four major sections of the *Handbook*, each consisting of one or more volumes

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

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ADVISORY BOARD (continued)

CONTRIBUTORS

A. Acher
Laboratoire de Chemie Biologique
Faculte des Sciences de l'
Universite de Paris
Paris IV BAB 19-64
France

K. L. Agarwal
Department of Biochemistry
University of Chicago
Chicago, Illinois 60637

R. P. Ambler
Department of Molecular Biology
King's Buildings
University of Edinburgh
Edinburgh, EH9 3JR
Scotland

Winona C. Barker
National Biomedical Research Foundation
Georgetown University Medical Center
Washington, D. C. 20007

G. H. Beaven
National Institute for Medical
Research
The Ridgeway
London, NW7
England

Dennis Borden
Department of Biochemistry and
Molecular Biology
Northwestern University
Evanston, Illinois 60201

Felix Borek
Department of Microbiology
Tel-Aviv University
Ramat Aviv, Tel-Aviv
Israel

D. P. Botes
Council for Scientific and Industrial
Research
National Chemical Research Laboratory
Pretoria, 0001
South Africa

Ralph A. Bradshaw
Department of Biological Chemistry
Division of Biology and Biomedical
Sciences
Washington University School of
Medicine
St. Louis, Missouri 63110

James R. Brown
Department of Chemistry
Clayton Foundation Biochemical
Institute
The University of Texas at Austin
Austin, Texas 78712

Henry B. Bull
Department of Biochemistry
The University of Iowa
Iowa City, Iowa 52242

G. Chi Chen
Cardiovascular Research Institute
University of California
School of Medicine
San Francisco, California 94122

R. A. Chen
Public Health Service
National Institutes of Health
Bethesda, Maryland 20853

Margaret O. Dayhoff
National Biomedical Research
Foundation
Georgetown University Medical Center
Washington, D. C. 20007

Richard E. Dickerson
Department of Chemistry
California Institute of Technology
Pasadena, California 91109

Russell F. Doolittle
Department of Chemistry
University of California, San Diego
La Jolla, California 92037

Jan Drenth
Laboratorium voor Structuurchemie
Chemische Laboratoria der
Rijksuniversiteit
Zernikelaan, Paddepoel, Groningen
The Netherlands

John B. R. Dunn
Department of Chemistry and
Biomedical Sciences
Oregon Graduate Center
Beaverton, Oregon 97005

K. R. K. Easwaran
Molecular Biophysics Unit
Indian Institute of Science
Bangalore, 560012
India

Peter P. Fietzek
Max-Planck Institute fur Biiochemie
8033-Martinsreid bei
Munich
West Germany

Joseph A. Gally
School of Graduate Studies
Meharry Medical College
Nashville, Tennessee 37208

Morris Goodman
Department of Anatomy
Wayne State University
School of Medicine
Detroit, Michigan 48201

Christoph de Haën
Department of Biochemistry
Health Science Building
University of Washington
Seattle, Washington 98195

William F. Harrington
McCollum-Pratt Institute and
Department of Biology
The Johns Hopkins University
Baltimore, Maryland 21205

J. Ieuan Harris
Medical Research Council
Laboratory of Molecular Biology
Cambridge, CB2 2QH
England

K. Ingham
Clinical Endocrinology Branch
National Institute of Arthritis,
Metabolism, and Digestive Diseases
National Institutes of Health
Bethesda, Maryland 20014

Bruno Jirgensons
M. D. Anderson Hospital and
Tumor Institute
University of Texas
Houston, Texas 77025

Andrew H. Kang
University of Tennessee
Center for Health Sciences
Veterans Administration Hospital
Memphis, Tennessee 38104

Linda M. Keefer
Department of Biological Chemistry
Division of Biology and Biomedical
Sciences
Washington University School of
Medicine
St. Louis, Missouri 63110

Jack L. Koenig
Department of Macromolecular
Science
Case Western Reserve University
Cleveland, Ohio 44106

Gerson Kegeles
Section of Biochemistry and Biophysics
University of Connecticut
Storrs, Connecticut 06268

CONTRIBUTORS (continued)

H. Lehmann
MRC Abnormal Haemoglobin Unit
Department of Biochemistry
University of Cambridge
Addenbrooke's Hospital
Cambridge, CB2 2QR
England

Joann S. Loehr
Department of Chemistry
Portland State University
Portland, Oregon 97207

Thomas M. Loehr
Department of Chemistry and
Biochemical Sciences
Oregon Graduate Center
Beaverton, Oregon 97005

Rose G. Mage
Laboratory of Immunology
National Institute of Allergy and
Infectious Diseases
National Institutes of Health
Bethesda, Maryland 20014

Emanuel Margoliasch
Department of Biochemistry and
Molecular Biology
Northwestern University
Evanston, Illinois 60201

Chris Nolan
Department of Molecular Biology
Abbott Laboratories
North Chicago, Illinois 60022

James C. Osborne, Jr.
Clinical Endocrinology Branch
National Institute of Arthritis,
Metabolism, and Digestive Diseases
National Institutes of Health
Bethesda, Maryland 20014

Paul C. Painter
Department of Macromolecular Science
Case Western Reserve University
Cleveland, Ohio 44106

John G. Pierce
Department of Biological Chemistry
School of Medicine
The Center for the Health Sciences
University of California, Los Angeles
Los Angeles, California 90024

John Potts, Jr.
Endocrine Unit
Harvard Medical School
Massachusetts General Hospital
Boston, Massachusetts 02114

Miloslav Rechicigl, Jr.
Office of Research and Institutional Grants
Agency for International Development
Department of State
Washington, D. C. 20523

Gerald Reeck
Department of Biochemistry
University of Washington
Seattle, Washington 98105

M. W. Rees
Department of Virus Research
John Innes Institute
Colney Lane
Norwich, NR4 7UH
England

James R. Riordan
Biophysics Research Laboratory
Peter Bent Brigham Hospital
Boston, Massachusetts 02115

Michael Sela
Department of Chemical Immunology
The Weizmann Institute of Science
Rehovot, Israel

Jerome M. Seyer
University of Tennessee
Center for Health Sciences
Veterans Administration Hospital
Memphis, Tennessee 38104

Gene M. Shearer
Immunology Branch
National Cancer Institute
National Institutes of Health
Bethesda, Maryland 20014

Lawrence B. Smillie
Department of Biochemistry
The University of Alberta
Edmonton, T6G 2E1
Canada

Donald F. Steiner
Department of Biochemistry
University of Chicago
Chicago, Illinois 60637

E. Hardin Strickland
15980 Yellow Brick Road
Valley Center, California 92082

J. Strydom
Council for Scientific and
Industrial Research
National Chemical
Pretoria, 0001
South Africa

H. Susi
U.S. Department of Agriculture
Eastern Regional Research Center
Philadelphia, Pennsylvania 19118

Masaru Tanaka
Department of Biochemistry and Biophysics
University of Hawaii Medical School
Honolulu, Hawaii 96822

David Teller
Department of Biochemistry
Health Science Building
University of Washington
Seattle, Washington 89195

Russell Timkovich
Department of Chemistry
Illinois Institute of Technology
Chicago, Illinois 60616

Koiti Titani
Department of Biochemistry
Health Science Building
University of Washington
Seattle, Washington 98195

J. Vanderkooi
Johnson Research Foundation
University of Pennsylvania
Philadelphia, Pennsylvania 19174

Sam D. Waksal
Immunology Branch
National Cancer Institute
National Institutes of Health
Bethesda, Maryland 20014

John Walker
Medical Research Council
Laboratory of Molecular Biology
Cambridge, CB2 2QH
England

Kenneth A. Walsh
Department of Biochemistry
Health Sciences Building
University of Washington
Seattle, Washington 98195

R. Wojciech (deceased)

Jen Tsi Yang
Department of Biochemistry
and Biophysics
Cardiovascular Research Institute
University of California
School of Medicine
San Francisco, California 94122

Kerry T. Yasunobu
Department of Biochemistry
and Biophysics
Biomedical Sciences Building
University of Hawaii at Manoa
Honolulu, Hawaii 96822

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 III

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

Physical-chemical data on optical rotatory dispersion, circular dichroism, ultraviolet absorption, nuclear magnetic resonance, laser raman, infrared, and fluorescence of proteins are tabulated, e.g., oxytocin, viral coats, cytochromes, enzymes, hormones, immunoglobulins, haemoglobins, collagen, muscle, serum albumin.

Immunochemical data, such as immunoglobin allotypes and synthetic antigens, are made available.

The first volume contains information on amino acids, amino acid derivates, etc., and the second volume is mainly devoted to proteins.

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
January 1976

THE EDITOR

Gerald D. Fasman, Ph.D., is the Rosenfield Professor of Biochemistry, Graduate Department of Chemistry, Brandeis University, Waltham, Massachusetts.

Dr. Fasman graduated from the University of Alberta in 1948 with a B.S. Honors Degree in Chemistry, and he received his Ph.D. in Organic Chemistry in 1952 from the California Institute of Technology, Pasadena, California. Dr. Fasman did postdoctoral studies at Cambridge University, England, Eidg. Technische Hochschule, Zurich, Switzerland, and the Weizmann Institute of Science, Rehovoth, Israel. Prior to moving to Brandeis University, he spent several years at the Children's Cancer Research Foundation at the Harvard Medical School. He has been an Established Investigator of the American Heart Association, a National Science Foundation Senior Postdoctoral Fellow in Japan, and recently was a John Simon Guggenheim Fellow.

Dr. Fasman is a member of the American Chemical Society, a Fellow of the American Association for the Advancement of Science, Sigma Xi, The Biophysical Society, American Society of Biological Chemists, The Chemical Society (London), the New York Academy of Science, and a Fellow of the American Institute of Chemists. He has published 180 research papers.

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