

Book Review

Protein Folding Protocols. Methods in Molecular Biology, 350 Edited by Yawen Bai (National Institutes of Health, Bethesda, MD) and Ruth Nussinov (National Cancer Institute, Frederick, MD and Tel Aviv University, Israel). Humana Press: Totowa, NJ. 2006. xiv + 328 pp. \$99.50. ISBN 1-58829-622-9.

Jean Baum

J. Am. Chem. Soc., **2007**, 129 (38), 11873-11873 • DOI: 10.1021/ja0698127 • Publication Date (Web): 05 September 2007

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Mass Spectra of Designer Drugs, Including Drugs, Chemical Warfare Agents, and Precursors, Volume 1–2. By Peter Rösner (Altenholz, Germany), Thomas Junge (Landeskriminalamt Schleswig-Holstein, Kiel, Germany), Folker Westphal (Landeskriminalamt Schleswig-Holstein, Kiel; Germany), and Giselher Fritsch (Hessisches Landeskriminalamt, Wiesbaden, Germany). Wiley-VCH Verlag GmbH & Co. KGaA: Weinheim. 2007. xiv + 1034 pp. \$815.00. ISBN 978-3-527-30798-2.

This two-volume set contains the spectral data of more than 4,379 designer and medicinal drugs, chemical warfare agents, and precursors of illegal compounds for practical use by scientists engaged in forensic research. The spectra are arranged “in ascending order of the nominal mass of the most intense fragment (base peak). Compounds with identical base peaks are ordered by their second intense fragment, and so forth.” As a companion to the Rösner digital mass spectral database, the print version includes additional data, such as chromatographic and pharmacological information; information regarding the legal category of the compound according to the German controlled substances list, the U.S. Controlled Substances Act, and the U.N. list of substances under international control; and mass spectra indices. A Compound Index completes the set.

JA076978E

10.1021/ja076978e

Protein Folding Protocols. Methods in Molecular Biology, 350. Edited by Yawen Bai (National Institutes of Health, Bethesda, MD) and Ruth Nussinov (National Cancer Institute, Frederick, MD and Tel Aviv University, Israel). Humana Press: Totowa, NJ. 2006. xiv + 328 pp. \$99.50. ISBN 1-58829-622-9.

This book is a collection of articles on protein folding protocols that includes both experimental and computational approaches. Protein folding is one of the most important problems in biophysical chemistry and is being tackled from a number of different points of view and techniques in this book.

The book is composed of 16 chapters, with 10 chapters on experimental approaches and 6 chapters on computational approaches. They are clearly written and provide detailed protocols of the techniques, including experimental or computational prerequisites, and a detailed description of data analysis. Experimental techniques described include NMR, differential scanning calorimetry, single molecule forster resonance energy transfer, atomic force microscopy, and triplet–triplet energy transfer. Computational techniques include a description of the building block folding model, replica exchange molecular dynamics, molecular dynamics simulations, and bioinformatics approaches.

Unsigned book reviews are by the Book Review Editor.

This book has a varied selection of topics and provides a resource for researchers in protein folding to become familiar with protocols in computational and experimental areas. In addition to a diverse range of techniques, the compilation of chapters also covers how different stages of the protein folding process can be probed. For example, the characterization of the ensemble of unfolded states is described using NMR spectroscopic or triplet–triplet energy transfer experiments, and the determination of the transition state ensembles is discussed using hydrogen-exchange NMR, high-pressure NMR, the psi-value analysis, molecular dynamics simulations, or computer simulations. The book is written at a level understandable to a beginner and provides an up-to-date review of the field. It will be of great value to graduate students and researchers who would like to learn about modern techniques to probe protein folding events.

Jean Baum, *Rutgers University*

JA0698127

10.1021/ja0698127

Aminoglycoside Antibiotics: From Chemical Biology to Drug Discovery. Edited by Dev P. Arya (Clemson University). John Wiley & Sons, Inc.: Hoboken, NJ. 2007. x + 320 pp. \$115. ISBN 978-0-471-74302-6.

Aminoglycoside antibiotics are an important and interesting class of bioactive compounds because they bind to a diverse array of biological molecules and have a rich history as antibacterial agents. This book provides an excellent overview of the history, structure, synthesis, biological activity, toxicity, and therapeutic potential of aminoglycosides and should be useful to a broad audience from clinical practitioners to investigators interested in biomolecular recognition and drug development. Each chapter is written by leaders in the field of aminoglycoside chemistry and biology and contains both historical and up-to-date references that provide in-depth coverage of each topic and plenty of sources to find additional information.

This publication is quite timely, as bacterial resistance to aminoglycosides and other antibiotics continues to be at a crisis level. In addition, a significant need for novel therapeutics to combat HIV and anthrax remains, and aminoglycosides seem poised to play important roles in these efforts. For the most part, the book is well organized and provides a unique perspective on the complexity and diversity of the structures of aminoglycoside antibiotics and/or their biological targets. Its negative aspects are few and may only be an issue with readers not very familiar with aminoglycoside antibiotics. For example, the authors of each chapter have their own unique style when drawing the structures of aminoglycosides, which might cause some confusion when trying to compare structures in different chapters.

There is little doubt that this volume will be a tremendous resource for any investigator interested in the biochemistry of

aminoglycosides. I have been following the literature associated with these substances for 14 years, yet have learned a great deal from reading this book. Part of my own fascination with aminoglycoside antibiotics is their interesting history, structural diversity, and ability to bind with great affinity and specificity to numerous target molecules. Whether it is in the areas of medicinal chemistry, microbiology, or structural biology, aminoglycosides have captured the attention of the scientific community. This book has brought together an interdisciplinary group of scientists to provide an excellent overview of this important class of compounds and insight into what may be on the horizon in this rich and exciting field of study.

James Ricky Cox, *Murray State University*

JA076997O

10.1021/ja076997o

Name Reactions for Functional Group Transformations. Edited by Jie Jack Li (Pfizer Global Research & Development, Ann Arbor, MI). John Wiley & Sons, Inc.: Hoboken, NJ. 2007. xiv + 754 pp. \$130.00. ISBN 978-0-471-74868-7.

This book provides up-to-date information about 47 major classes of functional group transformations and includes a Foreword by E. J. Corey. Reactions are grouped into seven sections: Asymmetric Synthesis; Reduction; Oxidation; Olefination; Amine Synthesis; Carboxylic Acid Derivatives Synthesis; and Miscellaneous Function Group Manipulations. Most entries include a description of the functional group transformation and its mechanism, a historical perspective on its discovery, variations and improvements on the reaction, its synthetic utility,

experimental details, and references to the primary literature. The book concludes with a subject index and four appendices, which list the Table of Contents for *Name Reactions in Heterocyclic Chemistry*, *Name Reactions for Chain Extension*, *Name Reactions for Ring Formation*, and *Name Reactions in Heterocyclic Chemistry-2*.

JA077000K

10.1021/ja077000k

Corrosion Handbook: Corrosive Agents and Their Interaction with Materials, Volume 7: Sodium Chloride, Competely Revised and Extended 2nd ed. By G. Kreysa and M. Schütze (DECHEMA Society e.V. for Chemical Engineering and Biotechnology, Frankfurt, Germany). DECHEMA e.V.: Frankfurt and Wiley-VCH Verlag GmbH & Co. KGaA: Weinheim. 2007. xiv + 854 pp. \$500. ISBN 978-3-527-31123-1.

This book catalogs the influence of sodium chloride on more than 1800 materials, which are subdivided into the following four groups: "Metallic materials"; "Nonmetallic inorganic materials"; "Organic materials and plastics"; and "Materials with special properties". These groups are further subdivided according to their chemical formulas and alloys. The section "Materials Recommendations" follows, providing information on resistance for the four groups. The book concludes with a "Bibliography", "Key to materials compositions", "Index of materials", and a "Subject index".

JA0769797

10.1021/ja0769797