Book Reviews

The Biology-Chemistry Interface, A Tribute to Koji Nakanishi. Edited by R. Cooper (Pharmanex, Inc.) and J. K. Snyder (Boston University). Marcel Dekker, Inc., New York, NY. 1999. xv + 491 pp. 15 × 22.5 cm. $195.00. ISBN 0 8247-7116-8.

Under the editorship of Ray Cooper and John Snyder, a number of the former students and postdoctoral researchers trained in Professor Koji Nakanishi's laboratory at Columbia University have produced an exceptionally fine tribute to him through a collection of 17 chapters on various specialized topics in biological chemistry. The volume grew out of a special symposium at Columbia University held in honor of Koji's 70th birthday, and the volume includes two tribute letters with interesting and amusing insights. The preface also makes for interesting reading with a summary of Koji's scientific contributions and a brief biography. It would have been interesting to include a list of Koji's students in this section or, at least, an identification of the years during which the authors of this volume were in the Nakanishi laboratory.

In each chapter, these former students and postdoctoral fellows have written critical reviews on subjects that they have gone on to study in their independent careers, becoming world experts. In some cases, these are topics of study that were initiated in Professor Nakanishi's lab, such as circular dichroism, natural products isolation and structural elucidation, and the chemistry of vision. What is truly exceptional about this book is the nearly uniform and extremely high level of scholarship that the various authors have brought to this project. In several of the technique-oriented chapters, the key enabling techniques and strategies have been provided as an added dimension. Several chapters are of such exceptional quality as to justify purchase of the book on this basis alone. In general, most bio-organic natural products chemists will find this volume to contain much of interest and utility to their research and teaching activities. With its unique blend of biological chemistry and exceptional level of scholarship, all science libraries should invest in this important volume.

The chapters of the volume are appropriately arranged into natural products isolation, structure elucidation and biosynthesis, instrumental and spectroscopic techniques in natural products chemistry, synthetic and semi-synthetic medicinal and bioorganic chemistry, and miscellaneous topics in biological chemistry. The volume begins with two critical chapters of the limonoids and polygodial/warburganal. Each is well rounded with descriptions of the underlying "natural products story", tables of structures, structure−activity relationships, and biological activity. Chapter 3 provides a nice account of marine algal bromoperoxidases as well as a detailed description of how this enzymatic system may be prepared and utilized in chemoenzymatic applications.

The "techniques" section begins with a stunning chapter on the use and application of LC-hyphenated techniques in natural products chemistry (Chapter 4). A number of techniques are discussed in theoretical as well as practical terms, including LC−PDA (with post-column derivatization), LC-MS (various ionizations), and LC-NMR. The application of these techniques is richly illustrated with examples from the author's laboratory, giving numerous experimental insights. The three chapters that follow discuss various applications of CD to the absolute stereochemical analysis of natural products. All of these are of exceptionally high quality and are well illustrated with examples and experimental considerations. The first of these focuses on extensions of the modified Mosher ester method, including primary amines, carboxylic acids, and latent carboxylates. In a single place, Chapter 5 provides the enabling theory and techniques as well as very fine diagrams so as to make these methods easily accessible to practicing organic chemists. Chapter 6 provides a 51-page comprehensive discussion of the determination of absolute stereochemistry by the π-electron self-contained field/configuration interaction/dipole velocity molecular orbital method. Again, it is by rich illustration with examples that this method is made approachable to a broader community of scientists concerned with structural analysis. Chapter 7 cogently describes innovative new approaches of CD to carbohydrate conformational analysis, absolute stereochemistry of secondary alcohols, and qualitative and quantitative analysis of chiral drugs in biological fluids.

The synthetic and medicinal chemistry section begins with a good description of the reactivity and utility of furan-terminated cationic π cyclizations in natural product synthesis (Chapter 8). Chapter 9 follows with a multidisciplinary account of the avermectins, their chemical reactivity in epoxidation reactions, fragmentations, rearrangements, and epimerizations, and biological activities in the brine shrimp toxicity assay. Chapter 10 provides an extremely well articulated account of combinatorial synthetic methods, focusing on a presentation of the various methods and strategies, their relative attributes and drawbacks, and integration with high throughput screening (HTS) technologies. It concludes with a stimulating discussion of "the universal library", diversity space, and computational methods. The next two chapters (11 and 12) integrate a substantial amount of pharmacology into their description of imidazoline receptors and oxidoreductase approaches to antifungal agents. Both provide excellent background overviews of these subjects. An absolutely superb final chapter in this section focuses on the biochemical mechanisms by which C−O bonds are cleaved in nature. A comprehensive list of the various types of C−O bond cleavages is nicely illustrated with detailed reaction mechanisms (a great source of "cume" questions!). Chapter 13 finishes with an account of the authors examination of a novel C−O bond cleavage reaction−overall, a very scholarly 45-page chapter!

The final group of chapters focuses on diverse topics in biological chemistry. Chapter 14 gives a detailed account of amyloidosis in Alzheimer's disease, with particular attention to biophysical characterization of the tertiary structure of various β-amyloid proteins by CD, NMR, and molecular modeling. A detailed consideration of nicotine's stabilization of soluble forms of β-amyloid adds a provocative dimension to this excellent chapter. Three briefer chapters conclude the book (Chapters 15−17). These focus on synthetic retinals and bacteriorhodopsin, autonomous genomes, and immunoglobulin enhancer activation. The

chapter on autonomous genomes is especially thought provoking, blending together a discussion of science philosophy, chemical ecology, evolution, and the nature of self-replicating systems.

The printing and graphical reproductions are all of high quality, and the volume is well indexed (18 pages). All in all, with its breadth of coverage of important topics in biological chemistry and very high level of scholarship, this is an exceptionally fine tribute to one of the most influential scientists of our era. Congratulations to all associated with the project!

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Methods in Molecular Biology, Vol. 141. Plant Hormone Protocols. Edited by Gregory A. Tucker and Jeremy A. Roberts (School of Biological Sciences, University of Nothingham, UK). Humana Press, Totowa, NJ. 2000. x + 199 pp. 15 × 23 cm. $69.50. ISBN 0-896-03577-8.

As its title implies, this book presents protocols for the isolation or analysis of a variety of plant hormones. Most of the individual chapters are authored by European scientists, although there are also contributors from the United States and New Zealand.

The chapter titles are Extraction and Purification of an Enzyme Potentially Involved in ABA Biosynthesis; Differential Display: Analysis of Gene Expression During Plant Development; Abscisic Acid: ABA Immunoassay and Gas Chromatography/Mass Spectrometry Verification; Auxin Analysis; Photoacoustic and Photothermal Detection of the Plant Hormone Ethylene; Analysis of Gibberellins; Cytokinins: Extraction, Separation, and Analysis; Binding Studies; Mutagenesis; The Identification of Ethene Biosynthetic Genes by Gene Silencing: Antisense Transgenes, Agrobacterium-Mediated Transformation, and the Tomato ACC Oxidase cDNA; Extraction, Separation, and Analysis of Plant Phosphoinositides and Complex Glycolipids; and Reverse Genetics: Screening Plant Populations for Gene Knockouts.

The protocols provided give, in most cases, a detailed step-by-step procedure for the desired operation. The protocol for analysis of gibberellins, for example, provides a detailed procedure for sample cleanup, derivatization, and analysis by GC−MS, with information on such matters as column size, oven temperature, ions to be monitored, etc.

Overall, this book will prove to be a valuable laboratory handbook for anyone interested in the study of plant hormones.

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Additions and Corrections

1999, Volume 62

Hiroshi Uemoto, Masashi Tsuda, and Jun'ichi Kobayashi*: Mukanadins A-C, New Bromopyrrole Alkaloids from Marine Sponge *Agelas nakamurai*.

Page 1581: The planar structure of mukanadin A is the same as that of dispacamide D previously reported (Cafieri, F.; Carnuccio, R.; Fattorusso, E.; Taglialatela-Scafati, O.; Vallefuoco, T. *Bioorg. Med. Chem. Lett.* **1997**, *7*, 2283−2288).

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10.1021/np000192b
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2000, Volume 63

Jung-Rae Rho, Hyi-Seung Lee, Youngwan Seo, Ki Woong Cho, and Jongheon Shin: New Xenicane Diterpenoids from the Gorgonian *Acalycigorgia inermis*.

Page 254: The name acalycixeniolide C, designated by the authors for compound **1**, was already used for a metabolite isolated from the gorgonian *Acalycigorgia* sp. [Fusetani, N.; Asano, M.; Matsunaga, S.; Hashimoto, K. *Tetrahedron* **1989**, *45*, 1647−1652]. Therefore, acalycixeniolide C should read acalycixeniolide G throughout the paper.

NP0002280

10.1021/np0002280
Published on Web 05/31/2000

2000, Volume 63

Jongkolnee Jongaramruong and Adrian J. Blackman*: Polyhalogenated Monoterpenes from a Tasmanian Collection of the Red Seaweed *Plocamium cartilagineum*

Page 272 (Abstract and the end of paragraph 4) and page 274 (Experimental Section, the last heading): The correct name of compound **2** is (1*Z*,3*E*,7*E*)-8,9-dibromo-(1*Z*,5*R**,6*R**,9)-tetrachloro-6-methyloctatriene.

NP000234W

10.1021/np000234w
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1999, Volume 62

Richard J. Clark, Mary J. Garson, Ian M. Brereton, and John A. Kennedy: Vinylfurans Revisited: A New Sesquiterpene from *Euryspongia deliculata*.

Page 915: The authors point out that *iso*-dehydrodendrolasin reported in the above paper is 2-[(1′*E*,4′*E*,6′*E*)-4′,8′-dimethylnona-1′,4′,6′-trienyl]furan, while the furan isodehydrodendrolasin of similar name and previously reported by A. Fontana, C. Avila, E. Martonez, J. Ortea, E. Trivellone, and G. Cimino (*J. Chem. Ecol.* **1993**, *19*, 339−356) has the isomeric 2-[(3′*E*,6′*E*)-4′,8′-dimethylnona-3′,6′,8′-trienyl]furan structure.

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2000, Volume 63

Sianne Schwikkard, Bing-Nan Zhou, Thomas E. Glass, Jessica L. Sharp, Michael R. Mattern, Randall K. Johnson, and David G. I. Kingston: Bioactive Compounds from *Combretum erythrophyllum*.

Pages 457−460: Compounds **1** and **2** reported in this paper have been previously reported from *Combretum krausii* by Verotta and colleagues,[1] and their synthesis has also been reported.[2]

(1) Pelizzoni, F.; Verotta, L.; Rogers, C. B.; Colombo, R.; Pedrotti, B.; Balconi, G.; Erba, E.; D'Incalci. M. *Nat. Prod. Lett.* **1993**, *1*, 273−280.

(2) Orsini, F.; Pelizzoni, F.; Bellini, B.; Miglierini, G. *Carbohydr. Res.* **1997**, *301*, 95−109.

NP0002637

10.1021/np0002637
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