# Book review

**Peptidomimetic Protocols in the series *Methods in Molecular Medicine* (Vol. 23) (Walker, J.M., series ed.)**

edited by W.M. Kazmierski, Humana Press, 1999. Price $89.50 (27 + 549 pages, hardback) ISBN 0-89603-517-4

The history of book publishing in organic chemistry, including both peptide and medicinal chemistry, has been dominated by volumes that describe, summarize or overview the underlying science. Despite the value to practicing organic chemists of series such as *Organic Synthesis* and Houben-Weyl's *Methoden der Organische Chemie*, publishers have been slow to recognize the importance of assembling cutting-edge experimental protocols. Incidentally, Houben-Weyl/Thieme are set to publish, in English, a potential competitor to this book entitled *Synthesis of Peptides and Peptidomimetics* that will be in two volumes, and which will also be available in an electronic version with full searching capabilities and crossover to electronic databases and journals.

## Content

As for the book in question, the editor does an excellent job of bringing together a variety of different chemical syntheses that are relevant to peptide, peptidomimetic, combinatorial and medicinal chemistry. Each chapter is written in the same general format of introduction, materials, methods, notes and references, which is always valuable for a book that will be regularly consulted. In addition, many of these are reported by acknowledged leaders in the field. No particular bias has been shown concerning the 'age-old' debate of what constitutes a peptidomimetic, and thus, the purists will be shocked to find benzodiazepines, sugar derivatives and vancomycin-related cyclic ethers all represented, as indeed they should be. The book includes a number of novel amino acid syntheses that will be extremely valuable to those scientists trying to understand the underlying medicinal chemistry of peptides.

Various turn-mimetics are also described with particular emphasis on the β-turn. Some of today's more sophisticated approaches to mimicking α- and $3_{10}$-helices are not included. Other examples included are dipeptide structures containing the *cis*-amide bond, that are thought to play a crucial role in protein folding and changes in peptide and protein conformation. These are mimicked with a tetrazole that is then inserted into peptide sequences. Although the chapters devoted to enzyme inhibitors include the synthesis of norstatine and its derivatives, other key examples of peptidomimetic chemistry being applied to enzyme inhibition are missing, such as the elastase story from AstraZeneca, the non-peptide farnesyl transferase inhibitors from Andy Hamilton (Yale University, CT, USA) and others, along with the multitude of approaches to matrix–metalloproteinase inhibition. This would have been of particular value to those of us in the pharmaceutical and biotechnology industries.

In general, there is little overlap between the individual chapters, but the three chapters from Ron Borchardt *et al.* describing three different variants of esterase-sensitive cyclic prodrugs for peptides could easily have been combined into one chapter. Although all of the chapters have an 'Organic Synthesis' orientation, it is not clear to what extent the experimental details of these syntheses have been verified for reproducibility. One hopes that a contribution to a book of this sort places the author's reputation on the line in terms of the accuracy of the protocols.

## Presentation

Now some comments that concern the publishers of this book, Humana Press. Surprisingly, they have seemed unable to reformat individual contributions of text and structures into a uniform style, as illustrated by the first few pages of the book. Thus, the abstracts on pages XXI–XXV contain almost as many different iterations of the parameters of commercially available chemistry drawing software as there are chapters in the book. Furthermore, although there are 56 references in Chapter 20, only 14 of them are cited in the text. With respect to the figures, Chapter 26 contains the only diagram with white chemical structures and text on a black background. Further diagram variability is found in Chapters 27 and 30 with no less than eight different diagram formats in the same chapter, together with signs that many are bitmap or photo images that have been adjusted to fit the space available.

## Conclusion

In conclusion, the contents of this book are extremely valuable and I have no doubt it will find its way into many of the world's leading industrial and academic organic chemistry laboratories.

*Nigel R.A. Beeley*
*Arena Pharmaceuticals Inc.*
*6166 Nancy Ridge Drive*
*San Diego, CA 92121, USA*
*tel: +1 858 453 7200 ext. 276*
*fax: +1 858 453 7210*
*e-mail: nbeeley@arenapharm.com*

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