

*Book review***An Introduction to Medicinal Chemistry (Third Edition)**

By Graham L. Patrick

770 pp., Oxford University Press, 2005, ISBN 0-19-927500-9, £28.99

The First Edition of Patrick's *Medicinal Chemistry* appeared in 1995 and now, 10 years later, we have the Third Edition, perhaps an illustration of how fast things are developing. The *Preface* says that the text is aimed at undergraduates and postgraduates who have a basic grounding in chemistry. Actually I think they will need rather a lot of chemistry to understand what is going on here – but then this is medicinal *chemistry!* As is stated, the book certainly would be of great interest to students thinking of going into the pharmaceutical industry. This Edition has been expanded and updated to include four new chapters covering pharmacokinetics, antiviral drugs, anticancer agents and drug discovery. In addition to a variety of devices to assist student learning (Boxes, Key Points, Questions, Further Reading) there is a companion website, a set of student resources with self-test multiple-choice questions, rotatable 3D structures and further literature resources. For the lecturer the figures in the book may be downloaded electronically and there is a set of PowerPoint slides. So, in addition to the frequent updating there is a dynamic resource to go with the book and one that we have come more and more to expect with modern text book.

The 22 chapters are divided into four major sections. The first deals with pharmacodynamics and pharmacokinetics (chapter 8 is the new chapter here), while the second section deals with the general principles and strategies involved in discovering and designing new drugs and developing them for the marketplace. This section reads very well and has the flavour of someone who really knows the business. The third part covers QSAR, combinatorial synthesis and computer-aided design, and the final section deals with “a selection of specific topics”. These include antibacterial, antiviral and anticancer drugs as well as cholinergics, anticholinesterases, adrenergics, opiates and antiulcer drugs. These, the author says, to some extent reflect the changing emphasis of medicinal chemistry research. These chapters (actually like all the others) are well written and each chapter contains some basic background to help students' understanding. Thus the antiviral chapter has quite a lot on the structure and life cycle of viruses, for example: it also has a great deal on the development of anti-HIV drugs to illustrate the way rational drug design is dealing with a particularly difficult problem. In other parts of the book case studies are very helpful in understanding the industry and the way medicinal chemistry is done.

The book is very weighty but also comprehensive. I found the writing style very easy to read and felt that I learned new things rather easily. Things are well explained but I suspect that they would not be quite so clear if one did not have a reasonable grasp of chemistry and chemical structures. This book will

be a valuable source of reference on my bookshelf for the foreseeable future. I did not find any typos or other errors, but I was not so happy to see the 20 amino acids common in proteins referred to as "Essential Amino Acids": 'essential' has a different connotation in biochemistry.

For those not wishing to cope with quite so weighty a tome, the same author has produced *Instant Notes in Medicinal Chemistry* which covers much of the same ground but obviously less comprehensively. Published in 2001, it will also not be quite so up to date, but nevertheless is has the authors same very readable style. [*Instant Notes in Medicinal Chemistry*, Taylor & Francis, pp.278, £18.99, ISBN 1-85996-207-6.]

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