

# Strategies for Discovery

## Drug Discovery Handbook

Edited by *Shayne Cox Gad*.

*Wiley-Interscience, Hoboken 2005. xix + 1471 pp., hardcover \$ 160.00.—ISBN 0-471-21384-5*

This book reviews the techniques and strategies employed to discover new hits and design new drug-like compounds. Most of these techniques are just emerging or have been recently introduced into practice and therefore the average medicinal chemist might not be well acquainted with them as yet. Here lie the virtues and difficulties of the handbook, as the several topics are consistently treated at a specialist level, reading the book is serious work. Although the Editor does not state it explicitly, the 29 chapters seem to be divided and almost equally distributed between two sections, one dealing with techniques for screening and lead generation or evaluation ("Screens") and the other with the more classical methods of "Therapeutic Activity Approaches" to drug discovery. The two sections are well integrated and often the chapters on Screens are viewed again into the larger frame of some of the "Therapeutic Activity Approaches" chapters, as, for example, in the case of aptamers (Chapter 2), systems biology (Chapter 4), in the RNA-based therapies (Chapter 27) and targets and approaches for cancer drug discovery (Chapter 29). Even when the relation is not as direct as in the cases mentioned above, the reader receives a continuous stimulus to imagine how the new screening techniques could be applied to her/his areas of interest.

This reviewer found particularly interesting the chapters devoted to Screens as emerging new tools are reported, such as the quantitative spectrometric data-activity relationship models (Chapter 6), the simultaneous screening of multiple cell lines by CellCard technology (Chapter 9) or the revisiting of more "classical" techniques such as protein X-ray crystallography (Chapter 10), high-throughput screening (Chapter 13), virtual screening and combinatorial chemistry (Chapter 21). The therapeutic activity approaches to drug discovery are somewhat more conventional, although excellent reviews on GABA and glutamate receptor ligands (Chapter 18), antiviral drugs (Chapter 25), protein kinase inhibitors (Chapter 26) and RNA-based therapies (Chapter 27) can be found. Overall these chapters provide a general overview of the strategies that have been employed to explore that particular field of research. The chapters are consistently arranged in an introduction, review of the field, emerging trends, conclusion and bibliography sections, sometimes offering a fascinating historical perspective of the development of the field, as in the case of the RNA-based therapies (Chapter 27).

The bibliography is rich and well formatted; all the references include the title of the document, and this helps the reader to decide whether to refer to the primary source or not, as well as providing a rough tool to check for possible mistakes. The index is well organized, and only some unsubstantial minor mistakes could be found throughout text.

A handbook of this size and scope is at times difficult to handle, and occasionally this reviewer would have prefer-

red that a few things had been done differently, although this is a highly personal and questionable point of view. One difficulty, which hopefully the printer will spare to the reader, is the fact that, in the examined copy, figures are printed in black and white and that selected colour figures could be viewed on the web at ([ftp://ftp.wiley.com/public/sci\\_tech\\_med/drug\\_discovery/](ftp://ftp.wiley.com/public/sci_tech_med/drug_discovery/)). The site cannot be entered easily with a Power MAC G5 and, once inside, one can find colour figures relative to Chapters 4, 8 and 10 only. Surely this was simply a sample view of the colour figures, but even if, eventually, all of them were visible at that address and assuming that the difficulty Mac vs. PC had been taken into due consideration, the reader will be obliged to access the colour figures exclusively on the web, which might not be always possible or agreeable. Printing the figures in colour would be too expensive but possibly a CD-Rom, complete with colour figures, could be offered as an integral part of the Handbook thus making it possible to master it more easily.

All in all, the book is a welcome addition to the literature on Drug Discovery as it offers a quite comprehensive view of the field in all its complexity and recent developments. The Editor must be congratulated for having succeeded in collecting such a large body of information while maintaining a fairly homogeneous style and scientific level throughout the chapters.

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