Drugs: From Discovery to Approval
By Rick Ng
John Wiley and Sons Inc, Hoboken, NJ, 2004
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Drugs: From Discovery to Approval is an exciting and novel text, which ably fills a yawning gap in current pharmacology and pharmaceutical science titles. In essence, it provides a concise, yet comprehensive, survey of the entire drug development process. Dr Rick Ng uses his considerable experience and knowledge of the pharmaceutical industry to guide us from initial disease target validation, through drug screening and rational drug design strategies, to the necessarily rigorous clinical trial of a lead compound, prior to its eventual approval for widespread clinical use. Moreover, the reader is afforded informative discussion of regulatory affairs procedures, an important area often neglected in standard texts. The 11 chapters logically develop each subject area and also provide relevant suggested further reading. The proposed audience for the book is intentionally wide, providing the lay reader with an insight into the near invisible world of drug development, whilst also acting as an excellent working text for students of most medical sciences. The book is especially strong in taking the reader from ‘first principles’, especially with regard to drug receptor pharmacology, molecular biology and developmental organic chemistry, and relating these to selected medical conditions. Exciting, cutting-edge technologies, such as stem cell and gene therapeutic approaches, are also discussed for their impact upon the modern pharmaceutical industry. The book is also eminently suitable as a reference source for professionals employed in the pharmaceutical industry, academic departments and health-related governmental offices, all of whom will appreciate this timely book. Dr Ng’s understanding of their individual specialities, along with his ‘joined-up’ overview of their professional world allows the reader to see the complexity, cost and not inconsiderable controversy associated with development of a new drug. A useful series of appendices and a jargon-busting explanation of acronyms complete this excellent and essential text.

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Chemical genomics
By Ferenc Darvas, Andras Guttman and Gyorgy Dorman
Marcel Dekker Inc, New York, NY, 2004
355 pp, ISBN: 0 8247 5490 5

I would not have given this book a second glance had I not been asked to review it. From the title, I expected the contents to be solely about interactions between drugs and proteins/DNA. However, having read the book I realise that the title does not reflect the content. The first chapter defines the title: the process of tackling broad sets of targets more efficiently than a series of individual unrelated targets. This is followed by a broad-based and easy to read chapter on 'In silico chemical genomics', that explores the ways computers can be used to predict protein structures and to study interactions in atomic detail. The optimisation of the process, including design of a chemical library, compound quality, data analysis and integration, screening development and high throughput screening (HTS) technologies are discussed in Chapter 3, that provides a wealth of information. Chapter 4 explores microchip-based HTS, transcriptomes, small molecule arrays, proteomics and large molecule arrays, cell-based arrays and microfluidics.

Having set the scene, the remaining chapters focus on applications. Chapter 5 elucidates HT approaches to chemical genomics. This chapter is well referenced and covers a range of methodologies of interest. The shortest chapter, 6, introduces multifunctional photoprobes for rapid protein identification. I found this exciting and it has stimulated me to explore their utility. In Chapter 7, the lipidome is thoroughly described and the potential for defining new therapeutic targets discussed. Chapter 8 investigates pharmogenetics of the dopamine system, specifically neurotransmission-related gene polymorphisms. The molecular changes are comprehensively described. The final chapter presents an approximate string-matching algorithm, KERR, for DNA patenting in the pharmaceutical industry. This chapter seeks to answer the question 'How would I carry out a search to determine the patentability of a gene?'

I thoroughly enjoyed this book and have already had to retrieve it from my PhD students who are anxious to read it. Make sure your library has a copy!

Pamela Greenwell

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