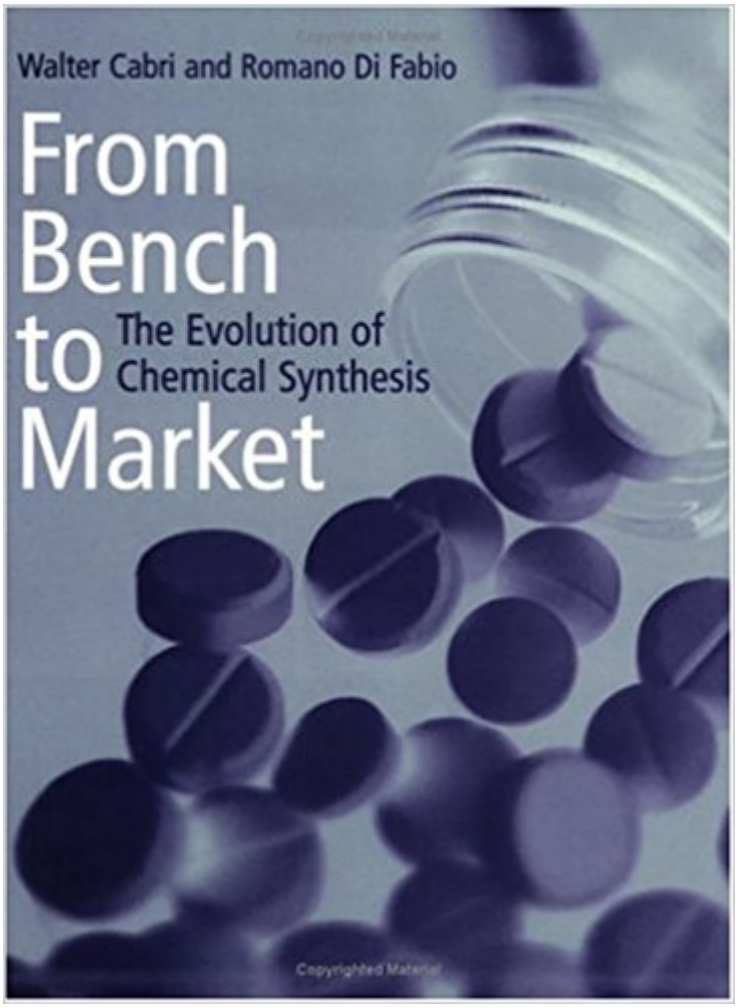
From Bench To Market: The Evolution Of Chemical Synthesis



Synopsis

Who wins the race to turn molecules into medicines? How much does it cost? What factors influence the choice of synthetic routes and reaction mechanisms? How can pharmaceutical companies protect their discoveries? In From Bench to Market, Walter Cabri and Romano Di Fabio chart the process of industrial chemical synthesis, from the first discovery of a molecule, or 'new chemical entity', to its entry in the marketplace as a drug. They discuss all aspects related to the process research for bulk production, including comparison between different synthetic routes, key methodologies and reaction mechanisms, costs, patent competition, and crystalline forms. The authors use the real chemical history of the development of drugs from several therapeutic areas as detailed case studies, each chosen to illustrate a range of issues and methodologies in industrial chemistry. Several chapters cover the development of the various ÃƒÅ¸-lactam antibiotics; two chapters describe the discovery and synthesis of the anticancer drugs Idarubicin and Paclitaxal; in another chapter, the synthesis of the anti-viral drug Acyclovir and the 'patent war' that resulted are explored. The technical, practical, and strategic information gathered here make this essential reading for graduate and undergraduate chemists intending to work in the pharmaceutical industry, as well as for industrial chemists themselves. Lecturers teaching courses in medicinal and organic chemistry will also find it useful.

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"The authors have been personally involved in several of the processes described and in all cases it

is clear that they are able to draw extensively upon experience gained wit some of the pre-eminent PR&DC groups, both in Italy and internationally... In all cases the authors present a very comprehensive and detailed account of the chemical challenges... An extraordinary range of chemistry is covered in great depth, including information about yield, purity and solvents used, as well as isolation methods... The first and concluding chapters of this book provide a perfect overview to the context and future perspective of modern PR&DC... I found this book to be a thoroughly enjoyable read and it should appeal to all practicing synthetic, organic and medicinal chemists... it should prove to be inspirational reading for PhD and BSC chemists alike."--Dr. David M Andrews, Journal of Pharmacy and Pharmacology

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