

## Book Review

Christoph Sontag, Ph.D.

**Book name:** Essentials of Pharmaceutical Chemistry 4<sup>th</sup> edition

**Author:** Donald Cairns

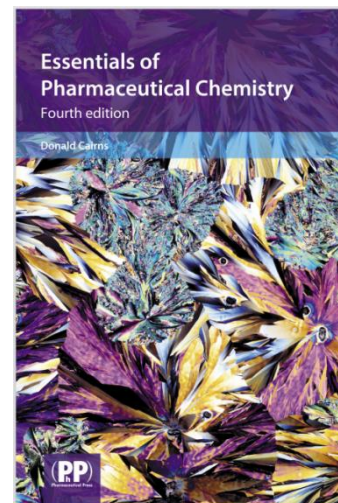
**Publisher:** Pharmaceutical Press, London

**Published:** 2012

**Language:** English

**Paperback:** 295 pages

**ISBN** 978 0 85369 979 8



This textbook is an excellent compendium of the various topics concerning chemical, physical and biological properties of organic molecules relevant for pharmaceutical applications. A basic understanding of chemistry on a high-school level would be necessary to profit from the text. It is a helpful tool to study the most relevant chemical and physio-chemical aspects of drug molecules as well as to serve as a great reference book.

Typical chemical properties explained cover acid/base behavior, stereochemistry and stability towards hydrolysis and oxidation and the kinetics behind. Physiochemical aspects discussed are partition coefficients/absorption, chromatographic isolation methods and several case studies for typical drug molecules. Two chapters deal with analytical methods: volumetric/titration methods and spectroscopic analysis. Biological aspects of drug molecules described are metabolism and enzyme/receptor-drug interactions. The book concludes with drug licensing, development and actual medical issues in today's society. A small limitation of the text is the exclusive focus on organic molecules; interesting developments in inorganic/metalorganic drug chemistry are omitted. Nevertheless those could be found in more specialized literature. The covered topics allow the reader to get a good fundamental understanding how drug molecules are developed, characterized, isolated and how they actually work.

The layout of each chapter is consistently simple and clean. Each of them can be studied independently, using various examples and ending with case studies and problems to solve. This enhances the learning process significantly. Theoretical aspects for each topic are briefly explained like atomic structure, chemical kinetics, nomenclature, etc. without going into distracting details (which are covered by numerous general chemistry textbooks). A drawback in the layout may be the sometimes sparse use of pictorial illustrations, which would have made the reading less tedious.

This compendium may not be only interesting for pharmaceutical students but also for learners of medicine and bio- or environmental chemistry. It is also a great reference book for professionals in pharmacy, biology and medicine. For all these groups this textbook is highly recommended.

### Reviewer

Dr. Christoph Sontag  
e-mail: c.sontag@web.de

