
The cytochromes P450 are an important family of xenobiotic-metabolizing enzymes, as they are believed to metabolize most foreign compounds including carcinogens and drugs. Indeed, over 200000 chemicals are metabolized by these cytochromes and it is widely believed that differing susceptibility to chemically induced ill-health may be associated with the large inter-individual variability in P450 levels. However, despite the immense research effort into examining the role of P450s in susceptibility, the overriding impression is one of confusion, with conflicting results from different human studies. While such conflict may reflect in part epidemiological design and practice, it is also possible that such differences may arise due to an incomplete knowledge and understanding of P450 expression and function. A basic primer to P450 research could then be of interest not only to the target audience (described as postgraduate and advanced graduate students as well as professionals throughout the pharmaceutical industry) but also to a wider group including those working in occupational health/hygience.

This book is intended to provide a guide to the extensive research literature on cytochromes P450. It is based upon a book written by the same author several years previously and the author uses that book as a template for the current book. It includes chapters on different topics including the evolution of the P450 superfamily, the P450 catalytic cycle, substrate selectivity and metabolism, regulation of P450 enzymes and the structures of P450s. Chapters cover a large amount of material in a very condensed manner given that they are relatively short (typically 20–30 pages). Clearly, some aspects will be treated briefly but it is disappointing that there is little material on toxicity mediated by P450 enzymes (~2 pages) and little or no discussion on, for example, associations between CYP genotype and phenotype and disease risk or the use of transgenic animal models to study P450 function.

This range of topics means that the reader is likely to find some material of interest but also that some of the chapters may be of lesser interest. For example, given my own background, the chapters on substrate selectivity and regulation of P450 enzymes were relatively easy to read and provided useful information of direct relevance to my own interests. Other chapters were, however, more difficult to read and understand and required a degree of specialized knowledge that I unfortunately lacked. Many terms were also used, without definition, which is probably fine for the target audience, but which certainly caused me some difficulty and confusion. I was never entirely convinced that certain abbreviations used in one chapter were used in the same way in a different chapter.

Although the book is no doubt suitable for its target audience, does it offer something which a wider readership might find useful? If you already have some knowledge of P450 research and want to refresh your memory, then the answer is probably yes. If, however, you have little knowledge, then a more basic guide is probably necessary.

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Since the first edition was published in 1972, this well-known and much-valued text has undergone a number of revisions and has served as a highly respected manual on radiation protection. Originally directed at scientists and physicians, it now seeks to encompass regulators in its audience. The fourth edition is a comprehensive revision and update of the previous edition (1990), in particular SI units have replaced many of the old units; there are exceptions where these have been retained for reasons explained by the author. Texts on radiation protection for many years have typically focused on ionizing radiation with non-ionizing radiation being the poor relative;
this edition partially addresses some of the bias by
giving non-ionizing radiation a higher profile with
one of the eight parts being wholly devoted to the
subject. Many aspects of non-ionizing radiation in
the public environment, workplace and medicine are
covered. An area not covered is that of optical
radiation, including lasers, which in itself is a broad
topic and was wisely not included. The publisher’s
description of the title, links to the contents and
extracts of some reviews can be found at http://

The size of the volume demonstrates the amount of
information available covering radiation protection
and its diversity. The number of pages has increased
from 494, including index, to 663. The format has
also changed, giving in most cases a margin of
7 cm—a bonus for those that wish to update links,
text and annotate their own notes.

When dealing with the regulatory aspects, the text
predominantly focuses on scientists, regulators and
professionals within the United States and those
countries which adopt US regulatory standards as
their own. However, this is balanced with references
to non-US national organizations and numerous
international bodies (also referenced in the selected
bibliography). Useful additions, reinforcing the inter-
national contributions, in the body of text would have
been information on the WHO International EMF
Project (http://www.who.int/peh-emf/en/), the publi-
cations of the International Labour Organization
(http://www.ilo.org/public/english/protection/safe-
work/publicat/iloshcat/rad-prot.htm), IAEA Rasa-
net information available on radiation and waste
safety (http://www-rasanet.iaea.org/home.htm) and
reference to IAEA guidance on the international safe
transport of radioactive material.

The amount of work invested in this edition must
have been considerable, and those who wish to have
a textbook that covers the fundamental basics, prin-
ciples, basis of regulation and corresponding public
issues will not be disappointed. Its strengths are in the
way the science is set out, the in-depth coverage of
ionizing radiation and examples of calculations and
methodologies that are of practical importance and
value. In addition, at the end of the volume there are
a number of appendices: one outlines various prob-
lems and provides answers, enabling those who wish
to test themselves; and another details useful data on
selected radionuclides.

In summary, this revised and updated edition will
no doubt carry on being an important training and
reference resource to a wide range of professionals,
giving a balanced view and providing an insight into
some of the challenges faced in radiation protection.

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