ago that a similar book was released. The publisher claims that the book should be of interest to scientists in the pharmaceutical industry, for regulators, and academic researchers and postgraduate students.

The book contains 15 chapters, written by 33 different authors, and is mainly divided into chapters covering each cytochrome P450 subfamily (CYP 1–4), as well as introductory chapters on the cytochrome P450 structure and function, reactive intermediates formed by cytochrome P450, and closing chapters covering their receptor-mediated regulation, the modulation of phytochemicals, and their role in cancer therapies. The chapters appear to have been written between October 2006 and November 2007, and essentially cover the literature published in 2006 and earlier. But what is new here that has not been presented before? A general update on the novel aspects of regulation, e.g microRNA and epigenetics, appear interesting. Furthermore, new cytochrome P450 genes have been described, in particular in animals. In fact, more than 5000 different cytochrome P450 sequences have been reported to date. Additionally, novel polymorphisms and alleles, and regulatory signal transduction pathways have been added. The toxicological aspects of this book, including metabolic schemes for drugs and other xenobiotics, have largely been published before in reviews and books, and consequently this book does not provide the reader with any new fresh information.

Overall, the book covers the cytochrome P450 field mainly from a historical and academic standpoint. The authors provide an overview of the basics of substrate specificities, inhibition, genetic polymorphisms and regulation of the different cytochrome P450 genes. The quality of the different chapters differs significantly. Some chapters mainly emphasize the author's own original research by reproduction of previously published data, whereas other authors indeed provide a novel updated aspect of their topic, including insights into fascinating developments in their field. Some chapters are short and not thorough enough. The different chapters take a different approach in describing the relative relationships in cytochrome P450s from human versus different animals; personally, this reviewer would have gained more from a generalized focus on human enzymes.

The book is merely encyclopedic in style rather than visionary and educational. It lacks summarizing figures and informative tables. In some cases, figures appear to have been copied from the internet sources, like the genomic website or the CYP allele nomenclature website. Additionally, a more critical attitude would have been beneficial to some of the authors describing, for example, results from genetic association studies and results from investigations in vitro to identify endogenous substrates for cytochrome P450s.

A wider discussion of clinical applications would have been attractive, and throughout the book there is a lack of applications to drug development. The chapter on cytochrome P450s in cancer therapeutics by Thomas Chang, however, contains such applications and I find it fresh and of interest. The chapter on receptor regulation by Paavo Honkakoski and others provides a very nice broad overview to the complex field.

In summary, I consider the book an updated encyclopedia of the current situation in cytochrome P450 research, useful as a reference book in many laboratories both at universities and in industry. For such a purpose, it contains a rather large index and also several summarizing tables making it relatively easy to look up relevant information. For people with interest in a specific cytochrome P450 isoform, reading of the appropriate chapter will, in general, adequately provide the most important information regarding the cytochrome P450 in question, although for about 4–5 of the subfamilies, this book lacks some important information.

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High-Throughput Analysis in the Pharmaceutical Industry

Edited by *Perry G. Wang.*

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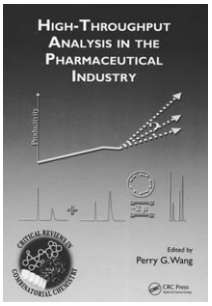

The pharmaceutical industry is in the process of a major transition focused on increasing the effectiveness of drug discovery and development. The traditional timelines and budgets to bring new chemical entities to commercial viability are no longer acceptable. The industry requires increased productivity for the same amount of research dollars with a higher rate of research success. These increased expectations have stimulated researchers to find opportunities to reduce analytical cycle times in order to generate more analyses and provide greater information without significantly increasing their departmental budgets. Moreover, since decisions made in discovery tend to have an enormous impact on the success of programs in preclinical and clinical development, additional information regarding in vitro ADME and bioanalytical support of in vivo studies are expected to be part of the candidate nomination process.

The increased expectations for discovery have led to the need for automation and high-throughput analyses in order to keep up with the demand to generate more information. The book *High-Throughput Analysis in the Pharmaceutical Industry*, edited by Perry Wang, is an appropriate and timely contribution to the scientific literature. This book is a detailed review of the various analytical approaches that have been adapted for increased productivity in the pharmaceutical industry. The book is a compilation of manuscripts written by industry researchers that are presently engaged in the approach they are discussing, and offers valuable details and insights into each research area. Each manuscript is one of fifteen chapters and many of the

chapters offer detailed discussions and insights on their topic that are very helpful to both newcomers to the field, as well as industry veterans. Most authors do a good job in describing the general topic being addressed and then dive into operational details that are important in understanding the benefits of their approach. The majority of chapters have an extensive literature reference list that guides the reader to much of the background information on the topic, which is particularly helpful for many coming into the field for the first time and want a more extensive understanding of the topic.

Although the book, in general, is a timely and very appropriate contribution to the collective science knowledge, it is primarily geared towards early discovery research. Most chapters are focused on describing high-throughput approaches to biological sample preparation for small molecule analysis, rapid and efficient chromatography for reduced cycle times, and HPLC/MS and MS/MS for quantification and metabolite identification, as well as the application of these techniques to bioanalytical support of drug metabolism and pharmacokinetic studies. As with any edited work that brings many authors to a common cause, there are several chapters that address many of the same basic concepts. However, each chapter provides a different application perspective, tainted by the author's individual experience, which may help the reader obtain a better and more balanced appreciation of these topics. The chapters are each organized differently and vary in length and detail. This book should not be viewed as a text book with each chapter addressing a component of an overall well-defined process, but rather as a collection of essays detailing the rich experience and knowledge of industry veterans that have pioneered or expanded these approaches to useful and robust techniques that can produce tangible results for efficient and effective drug discovery.

Overall, this book is a useful reference to those who are primarily engaged in early discovery support for small-molecule pharmaceutical research and expected to increase their productivity. This is a valuable review of the various approaches that colleagues in similar situations have undertaken with successful results and provides the reader with a valuable starting point and assessment of state-of-the-art technology for high-throughput analysis.

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