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Book Review

Pharmacogenetics, Kinetics, and Dynamics for Personalized Medicine by DF Kisor, MD Kane, JN Talbot and JE Sprague

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ABSTRACT

Pharmacogenomics is the study of genetic differences responsible for the variability in drug response among individual patients. Emerging from this new science is the development of diagnostic tools crucial for improving treatment strategies, as well as reducing drug side effects. As the importance of this science is being realized, the need for this discipline in pharmacy student training is becoming increasingly crucial to their professional development and training as healthcare professionals. As this discipline evolves, there is a clear need for tools that can enable lecturers to deliver this essential training; the current book review investigates aspects that are specific to the needs of the target audience and will explore the potential of 'Pharmacogenetics, Kinetics, and Dynamics for Personalized Medicine' in achieving this task.

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The book is clearly laid out and provides an excellent breadth of up-to-date information with a good compilation of topics. Each chapter clearly disseminates the learning objectives, which give a clear guidance to both students and teachers in developing learning. In particular a list of key terms at the start of each chapter is very useful in helping the student for preparing and understanding each chapter being studied or taught. The book provides an excellent opening chapter which introduces the topic of personalised medicines and covers the basic principles of molecular genetics, comprehensively defining the common terminology used with the field. This ensures accessibility for a broad audience by providing sufficient information on the fundamental principles to enable the reader to fully appreciate subsequent chapters without requiring detailed knowledge of genetics and personalised medicines from alternative sources. It is an excellent overview of the topic, using diagrammatic representation of the

core principles of molecular biology to facilitate understanding, and is attuned to a level that is acceptable for a pharmacy student, whatever the individual's background.

The book also effectively illustrates how the studies of pharmacogenetics and pharmacokinetics are interlinked. The amalgamation of these topics is a welcome addition to the book and allows the end user to appreciate how these subjects are closely associated, with specific examples of commonly prescribed drugs and their respective interactions with drug transporters. This provides the reader with a broad appreciation of role of these disciplines within the practice of pharmacy and moves away from a traditional 'modular' approach to learning. As with most chapters, the book also features useful end of chapter questions to enable confirmation of understanding by the reader.

In addition to a further chapter describing the relationship between pharmacogenetics and pharmacodynamics, the book also features several smaller chapters, each focusing on a commonly prescribed drug which has an established place with the field of pharmacogenetics. This is a very useful addition and the detail presented within each of these chapters helps the reader obtain a deeper understanding of the rationale between these drugs and pharmacogenetics. Moreover, the book also features a series of tables within the appendix listing both established pharmacogenetic associations, which clearly illustrates the wide scope the topic, and the potential for personalized medicines to revolutionise the practice of pharmacy.

Overall, 'Pharmacogenetics, Kinetics, and Dynamics for Personalized Medicine' provides an excellent overview of the topic, from basic principles of molecular genetics to the interactions of pharmacogenetics with commonly prescribed drugs in current clinical practice. The book is ideally suited to both an undergraduate pharmacy student and as a tool for continued development for those in pharmacy practice. It provides the reader with the necessary understanding for the immediate future as personalized medicines continue to expand into everyday medicine.

REFERENCE

Kisor, D.F., Kane, M.D., Talbot, J.N., Sprague, J.E., 2014. Pharmacogenetics, Kinetics, and Dynamics for Personalised Medicine. Jones & Bartlett Learning, Burlington, MA.