

Preface

In the past decade, the graduate medical curriculum, particularly in the first two years of medical school, has undergone innovative transformation. A major thrust of this transformation has been to present the core knowledge of basic and clinical sciences, spanning a number of disciplines, in a single integrated “Foundations” course. The goal is to train a competent physician who demonstrates knowledge of health problems and their prevention, based on current scientific thinking. It is my belief that while knowledge of the “who, what, where, and when” of health problems can be acquired from the study of many disciplines, it is biochemistry that provides the foundation for a thorough understanding of “why” such problems arise and “how” they can be effectively managed. The traditional, large textbooks were best-suited for use in the stand-alone biochemistry courses of the past, but with the advent of curricular reform, the need and demand for concise texts that emphasize the clinical relevance of basic biochemical knowledge and allow for quick review and self-directed learning has grown. *Medical Biochemistry – An Illustrated Review* was created to fulfill this need.

The biochemical principles in *Medical Biochemistry – An Illustrated Review* are structured and presented in a manner that allows for easy learning/review of key concepts and clear understanding of their connections to clinical conditions and other basic science subjects (e.g., physiology, pathology, and pharmacology). The more than 200 full-color illustrations of biochemical pathways/systems were designed specifically to meet the high-yield learning needs of medical students. Key features of these illustrations include the use of easily identifiable color-coded symbols that, for critical enzymes, highlight their modes of regulation, sensitivities to pharmacological agents, and associated clinical disorders. The more than 400 color-coded correlation boxes serve to connect key biochemical concepts with the other basic sciences and clinical conditions. The collection of 400 factual and USMLE-style questions (with full explanatory answers) available on our companion website (200 of which are included in the book) are important tools for students to test their knowledge of the basic biochemical concepts and their ability to apply this knowledge in identifying and solving clinical problems.

In this book, I have used art from the Thieme Flexibook series to support and enhance the text and summarize many of the key

points in a way that reinforces learning. I am particularly grateful to the illustrator Jürgen Wirth and the authors Professors Jan Koolmon and Klaus-Heinrich Roehm of *Color Atlas of Biochemistry*, second edition, revised and enlarged, from which a significant portion was adapted.

I am indebted to so many colleagues without whose contributions, generosity, and expertise, this project could not come to fruition. First of all, I am grateful to Anne Vinnicombe who oversaw the development and production aspects of the publication of the book and provided the needed guidance. She made sure that the wheels of this project kept turning despite various obstacles. My special thanks to Avalon Garcia, the developmental editor and a biochemist by training, who worked patiently and tirelessly with me not only in developing the content of many chapters but also in adapting and creating a majority of the illustrations and in developing questions. Renee Schwartz, Megan Conway, and Thieme's production team provided able editorial and production assistance. Julie O'Meara edited and wrote many of the boxes in Units IV (Metabolism) and V (Genetics and Cell Cycle). I particularly thank David Watt (University of Kentucky College of Medicine) for drafting the content in Chapter 16, Nucleotide and Heme Metabolism. I am thankful to several of my colleagues at Emory University School of Medicine who provided the inspiration for the content of many of the chapters in this book. The contributions of Engelbert Buxbaum (Ross University), Joseph D. Fontes (University of Kansas Medical Center), Karla Rodgers (University of Oklahoma Health Sciences Center) and J. David Warren (Weill Cornell Medical College) to the problem sets and to the review of the content are gratefully acknowledged. My thanks also to all of the reviewers of the manuscript for their many helpful suggestions.

All of the individuals involved in the publication of *Medical Biochemistry – An Illustrated Review* were united by a common goal which was to make concepts in biochemistry unintimidating, clinically relevant, and interesting. I hope we have accomplished this goal and welcome suggestions for improvements for future editions.

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