Renal Fibrosis
Renal Fibrosis

Volume Editors

Mohammed S. Razzaque  Boston, Mass.
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39 figures, 2 in color, and 11 tables, 2003
Drug Dosage. The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

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Preface

This book, with chapters contributed by leading experts in their field, contains the information required for a basic orientation on the molecular mechanisms of renal fibrosis. It is especially formatted for scientists and clinicians who need a quick update of fibrogenesis in their research and practice. Recent developments in our understanding of the cellular and molecular events of fibrosis have either offered new therapeutic choices or have led to the discovery of gene-based therapeutic options. This book provides a synopsis on the rapid progress encountered in the last couple of years in renal cell biology, which has enhanced our understanding of fibrogenesis in general.

Given the complexity of renal diseases, providing information on all aspects of fibrogenesis is clearly an overwhelming task. However, we selected topics that we believe will provide necessary information on the molecular basis of renal fibrosis. We organized the subject matter with the intent that it may be useful to general health professionals, while also being of interest to clinicians and researchers familiar with the field. Our editorial approach was to make the book easy to read. We encouraged our authors to provide diagrams and tables, which in most cases summarize complex biological processes in simple terms. We hope our readers will find this book a clear, useful and informative tool for understanding some of the basic molecular mechanisms of fibrotic renal diseases. Our sincere hope is that amongst the readers, a few will be inspired to take up the challenges and reap the rewards for themselves to further enhance the knowledge and understanding of the pathomechanisms of fibrotic diseases, eventually leading to better patient care.
We are fortunate to have a group of basic and clinical investigators who have devoted their time and effort to bring this book up to date. We would like to take this opportunity to express our thanks and gratitude to each of the contributors for kindly sharing their knowledge and expertise. We are grateful to Karger Publishers, Switzerland, for their support in bringing this project to completion. A special thanks goes to Peter Roth and his staff. Last but not least, we acknowledge the kind support of our families (Rafi, Yuki, Kanako, Ai, and Kazuko) for their encouragement and patience during our many hours of writing and editing. We hope that this book will be important reading for all those involved in the basic and clinical research of matrix biology.

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Foreword

Postnatal injury to skin or internal organs in humans most often initiates a repair process that results in the formation of a collagen-rich scar or a fibrotic mass instead of a regenerated and fully functional organ. In internal organs, such as the lung, liver, or kidney, the consequences of fibrosis can be devastating. Understanding and controlling tissue repair processes with the goal of preventing fibrosis has been a high priority in clinical research for a long time. This volume on Renal Fibrosis, with chapters contributed by a number of well-known clinical investigators, therefore addresses a significant set of problems.

The book provides a strong reminder that progress in this field is intimately connected with advances in research on fundamental molecular and cellular mechanisms in the areas of immunology, inflammation, and extracellular matrix biology. Exciting progress in each of these areas has led to the identification of a large number of genes, gene products, and biochemical pathways that are likely to be involved in the cellular responses that lead to fibrosis, allowing a rich and molecularly detailed context for discussing fibrotic repair. A large number of cytokines, intracellular signaling molecules, transcription factors, and extracellular matrix components are important participants and modulators at different stages of the progression of fibrosis, and up-to-date reviews of many of these molecules can be found in this book. The reviews do an excellent job in defining where current work on renal fibrosis stands and in which directions the work ought to proceed. Studies in the suggested directions will continue to define markers of disease progression and molecular targets for drugs to treat fibrotic conditions.
Additional insights will undoubtedly also come from research that is not directly addressed in this book. For example, as we learn more about regenerative wound repair, it may become possible to define the critical step(s) during wound healing when one imperfect process (scarring/fibrosis) wins out over the more perfect process of regeneration. It will therefore be important for investigators of fibrosis to keep an eye on research into regenerative mechanisms in model organisms. It could well be that critical insights into the pathogenesis of fibrosis, leading to effective clinical strategies of prevention, will ultimately come from studies of tissue/organ regeneration in organisms (such as the zebrafish) where regenerative repair is a potent alternative to fibrotic repair of wounds.

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