



Regenerative Nephrology

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AUDIENCE: Experimental and clinical nephrologists, stem cell specialists, molecular and developmental biologists, biomedical engineers, pharmacologists and physiologists.

SHELVING CLASSIFICATIONS:

Molecular Biology, Cellular Biology, Human Physiology

BISAC CODES: MFG, PSD, PSF

THEMA CLASSIFICATION:

THEMAMFC; THEMAMFG;

THEMAPSF; THEMAPSX

Presents a comprehensive, translational source for all aspects of renal stem cells, tissue regeneration, and stem cell therapies for renal diseases in one reference work.

KEY NEW FEATURES

- A significant expansion of section on induced pluripotent cells and trajectories of their differentiation. This is followed by mechanisms and modalities of cell reprogramming for therapeutic purposes.
- A new section on tissue engineering of the kidney to be of interest to nephrologists and urologists.
- An entire section dedicated to causes of regenerative failure with the emphasis on recent discoveries of senescent cells in kidney disease, pathologic effects of senescent cells, advents in senotherapies and rejuvenation therapies.
- A vastly expanded section on pharmacotherapies promoting kidney regeneration, trials of engineered organs, manufacturing in regenerative medicine and smooth transition to the clinical trials, with an update on some ethical issues.

DESCRIPTION

Since the publication of the first edition of this book in 2010, an explosion of spectacular discoveries in the field of regeneration has compelled the current revisit of the field of Regenerative Nephrology. This second edition features subjects as diverse as age and gender influencing regenerative processes; mechanisms and pathways of premature cell senescence affecting kidney regeneration; the ways intrinsic regenerative processes can become subverted by noxious stressors eventuating in disease progression; novel mechanistic and engineering efforts to recreate functional kidney or its component parts; cell reprogramming and reconditioning as emerging tools of future regenerative efforts; and effects of various biologicals on kidney regeneration. These newer additions to the armamentarium of Regenerative Medicine and Nephrology have become an integral part of the second edition of the book. Cutting-edge investigations are summarized by the constellation of the most experienced contributing authors coming together from around the world under the umbrella of the second edition.

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